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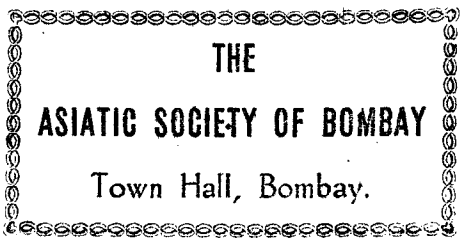

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THE

BRITISH MOTHS

AND

THEIR TRANSFORMATIONS

ILLUSTRATED IN A SERIES OF PLATES BY H. N. HUMPHREYS, ESQ

WITH

CHARACTERS AND DESCRIPTIONS BY J. O. WESTWOOD, ESQ., F.L.S.

MEM. ENT. SOC. LONDON AND FRANCE; HON. AND CORR. MEM. NAT. HIST., AND OTHER SOCIETIES OF QUEBEC, BOSTON (U.S.), PENNSYLVANIA, STETTIN, MOSCOW, LUND, LILLE, LYONS, DUBLIN, PARIS, BELFAST, TORQUAY, RICHMOND, SHEFFIELD, ETC.

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WILLIAM AND ROBERT CHAMBERS

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„ 20. The variety called conversaria.
„ 18. The Caterpillar.
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„ 23. Alcis Roboraria (the great oak beauty).
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„ 3. Tephrosia abietaria (the ingrailed). 22 in plate 60 is the Caterpillar.
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„ 7. Tephrosia punctularia (the grey birch).
„ 8. The Caterpillar.
„ 9. Halia vauaria (the common V moth).
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„ 3. Epione apiciaria (the bordered beauty).
„ 4. Epione vespertaria (the dark-bordered beauty).
„ 5. The Caterpillar.
„ 6. Epione advenaria (the little thorn).
„ 7. Eurymene dolabraria (the scorched wing).
„ 8. The Caterpillar.
„ 9. Aspilates citraria (the yellow belle).
„ 10. A variety.
„ 11. Aspilates gilvaria (the straw belle).
„ 13. Aspilates respersaria (the grass wave).
„ 14. The Caterpillar.
„ 15. Phasiane plumbaria (the belle).
„ 16. Larentia cervinaria (the mallow).
„ 12. The Caterpillar.
„ 17. Larentia chenopodiaria (the small mallow).
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„ 20. Larentia multistrigaria (the mottled grey).
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„ 2. Cidaria munitata (the rufous carpet).
„ 3. Cidaria ferrugata (the red twin spot).
„ 4. Cidaria unidentaria (the dark-barred twin spot).
„ 5. Cidaria quadrifasciaria (the large twin spot).
„ 6. The Caterpillar.
„ 7. Cidaria latentaria (the northern twin spot).
„ 8. Cidaria silicaria (the striped twin spot).
„ 9. Cidaria miaria (the green carpet).
„ 10. Cidaria olivata (the beech green carpet).
„ 11. Cidaria montanata (the silver ground).
„ 12. Cidaria fluctuata (the garden carpet).
„ 13. The Caterpillar.
„ 14. Cidaria propugnata (the flame carpet).
„ 15. Venusia cambrica (the Welsh wave).
„ 16. Harpalyce fulvata (the barred yellow).
„ 17. The Caterpillar.
„ 18. The Chrysalis.
„ 19. Harpalyce ocellata (the purple bar).
„ 20. The Caterpillar.
„ 21. Harpalyce galiata (the galium carpet).
„ 22. Harpalyce tristata (the small argent and sable).
„ 23. The Caterpillar.
„ 24. Harpalyce subtristata (the common carpet).
„ 25. Harpalyce sylvaticata (the wood carpet).
„ 26. Harpalyce unangulata (the sharp-angled carpet).

	FIG.		PAGE
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,,	28.	Harpalyce silaceata (the small phœnix).	
,,	29.	Harpalyce corylata (the broken-barred carpet).	
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INSECTS.	1.	Polyphasia marmorata (the marbled carpet).	
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,,	3.	Polyphasia immanata (a variety of the preceding).	
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,,	5.	The Caterpillar.	
,,	6.	The Chrysalis.	
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,,	10.	The Caterpillar.	
,,	11.	The Chrysalis.	
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,,	13.	Anticlea rubidata (the flame).	
,,	14.	Anticlea sinuata (the royal mantle).	
,,	15.	Anticlea derivata (the streamer).	
,,	17.	The Caterpillar.	
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,,	19.	Electra populata (the poplar).	
,,	20.	The Caterpillar.	
,,	21.	Electra spinachiata (the spinach).	
,,	22.	Electra testata (the chevron).	
,,	23.	Electra pyraliata (the barred straw).	
,,	24.	Celma imbutata (the Manchester treble bar).	
,,	25.	Anaitis plagiata (the slender treble bar).	
,,	26.	Siona dealbata (the black vein).	
PLANT.	27.	Galium sp.	

PLATE LXV. 44

INSECTS.	1.	Abraxas ulmata (the scarce magpie).	
,,	2.	The Caterpillar.	
,,	3.	Abraxas pantaria (a variety of the preceding).	
,,	4.	Abraxas grossulariata (the magpie).	
,,	5.	A variety.	
,,	6.	A variety.	
,,	7.	The Caterpillar.	
,,	8.	The Cocoon.	
,,	9.	The Chrysalis.	
,,	10.	Melanippe hastata (the argent and sable).	
,,	11.	The Caterpillar.	
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,,	13.	Zerene albicillata (the beautiful carpet).	
,,	14.	Zerene procellata (the chalk carpet).	
,,	15.	Zerene adustata (the scorched carpet).	
,,	16.	Zerene rubiginata (the blue bordered carpet).	
,,	17.	Zerene plumbata (the dark blue bordered carpet).	

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INSECTS.	1.	Euthalia miata (the autumn green carpet).	
,,	5.	Euthalia psittacata (the red-green carpet).	
,,	3.	Euthalia impluviata (the May high-flyer).	
,,	4.	The Caterpillar.	
,,	5.	Euthalia elutata (the July high-flyer).	
,,	6.	A variety.	
,,	7.	The Caterpillar.	
,,	8.	A remarkable variety of the preceding species (horridaria).	
,,	9.	Phibalapteryx tersata (the fern).	
,,	10.	Phibalapteryx vitalbata (the small waved ambre).	
,,	11.	Phibalapteryx lignata (the oblique carpet).	
,,	12.	Phibalapteryx lineolata (the oblique striped).	
,,	13.	Phibalapteryx angustata (the narrow bordered carpet).	
,,	14.	Lozogramma petraria (the brown silver lines).	
,,	15.	Scotosia vetulata (the brown scallop).	
,,	16.	The Caterpillar.	
,,	17.	Scotosia sparsaria (the small scallop).	
,,	18.	Scotosia rhamnata (the dark umber).	

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INSECTS.	1.	Triphosa cervinata (the scarce tissue).	
,,	2.	Triphosa dubitata (the common tissue).	
,,	3.	Triphosa cinereata (the ashy tissue).	
,,	4.	Camptogramma bilineata (the yellow shell).	
,,	5.	Eucosmia undulata (the scallop shell).	
,,	6.	Charissa obscuraria (the dark annulet).	
,,	7.	The Caterpillar.	
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,,	9.	Charissa pullata (the brown annulet).	
,,	10.	Charissa serotinaria (the large mocha).	
,,	11.	Charissa operaria (the Scotch annulet).	
,,	12.	Pachycnemia hippocastanaria (the chestnut carpet).	
,,	13.	Chœsias spartiata (the streak).	
,,	14.	The Caterpillar.	
,,	15.	Thera obliquaria (the chevron).	

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INSECTS.	1.	Thera simulata (the brick carpet).	
,,	2.	Thera variata (the grey carpet).	
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,,	4.	The Caterpillar.	
,,	5.	Thera coniferata (the northern carpet).	
,,	6.	The Caterpillar.	
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,,	8.	A pale variety.	
,,	9.	Oporabia pelata (the polar carpet).	
,,	10.	Cheimatobia brumata (the winter moth).	
,,	11.	Cheimatobia rupicapraria (the early moth).	
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,,	14.	Lobophora lobulata (the early tooth-striped).	
,,	15.	The Caterpillar.	
,,	16.	Lobophora rupestrata (the double-lined).	
,,	18.	Lobophora hexapterata (the prominent).	
,,	19.	Lobophora sexalisata (the small seraphim).	
,,	20.	The Caterpillar.	
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PLATE LXIX. PAGE 58

FIG.
INSECTS. 1. Eupithecia linariata (the beautiful pug).
,, 2. The Caterpillar.
,, 3. Eupithecia pulchellata (the pretty pug).
,, 4. Eupithecia rectangulata (the green pug).
,, 5. Eupithecia nigro-punctata (the little pug).
,, 6. Eupithecia nigro-sericeata (the black silk pug).
,, 7. Eupithecia coronata (the V pug).
,, 8. Eupithecia strobilata (the double-striped pug).
,, 9. Eupithecia rufifasciata (the red-barred pug).
,, 10. Eupithecia lævigata (the juniper pug).
,, 11. Eupithecia exiguata (the barberry pug).
,, 12. Eupithecia abbreviata (the short pug).
,, 13. Eupithecia nebulata (the brindled pug).
,, 14. Eupithecia albipunctata (the speckled pug).
,, 15. Eupithecia subumbrata (the small-brindled pug).
,, 16. Eupithecia subfasciata (the subfasciated pug).
,, 17. Eupithecia vulgata (the common pug).
,, 18. Eupithecia irriguata (the Welsh pug).
PLANT. 19. Linaria vulgaris (common toadflax).

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INSECTS. 1. Eupithecia subfuscata (the brown grey pug).
,, 2. Eupithecia innotata (the unspotted pug).
,, 3. Eupithecia notata (the dotted pug).
,, 4. Eupithecia elongata (the long-winged pug).
,, 5. The Caterpillar.
,, 6. Eupithecia simpliciata (the plain pug).
,, 7. Eupithecia pulsillata (the small grey pug).
,, 8. Eupithecia absinthiata (the wormwood pug).
,, 9. Eupithecia sobrinata (the Scotch pug).
,, 10. Eupithecia angustata (the narrow-winged pug).
,, 11. Eupithecia plumbeolata (the lead-coloured pug).
,, 12. Eupithecia subfulvata (the tawny pug).
,, 13. Eupithecia cognata (the allied pug).
,, 14. Eupithecia succenturiata (the bordered lime-speck pug).
,, 15. Eupithecia piperata (the peppered pug).
,, 16. Eupithecia centaureata (the lime-speck pug).
,, 17. The Caterpillar.
,, 18. Eupithecia variegata (the marbled pug).
,, 19. Eupithecia consignata (the pinion-spotted pug).
,, 20. Eupithecia venosata (the netted pug).
,, 21. The Caterpillar.
PLANT. 22. Centaurea nigra (common knapweed).

PLATE LXXI. 66

INSECTS. 1. Cleogene niveata.
,, 2. Hyria auroraria (the purple-bordered gold).
,, 3. Hyria ——— var.
,, 4. Minoa chærophyllata (the chimney-sweeper).
,, 5. Minoa Euphorbiata (the drab looper).
,, 6. The Caterpillar.
,, 7. Bapta bimaculata (the white pinion spotted).
,, 8. Bapta punctata (the clouded silver).
,, 9. The Caterpillar.
,, 10. Aplocera cæsiata (the February carpet).
,, 11. Aplocera ——— var. flavicinctata.

FIG. PAGE
INSECTS. 12. Emmelesia decolorata (the sandy carpet).
,, 13. Emmelesia affinitata (the rivulet).
,, 14. Emmelesia turbaria (the middle rivulet).
,, 15. Emmelesia rivulata (the small rivulet).
,, 16. Emmelesia ericetata (the heath rivulet).
,, 17. Emmelesia blandiata.
,, 18. Emmelesia albulata (the grass rivulet).
,, 19. Emmelesia tæniata.
,, 20. Emmelesia unifasciata (the single-barred rivulet).
,, 21. Emmelesia bifasciata (the double-barred rivulet).
,, 22. Emmelesia rusticata, male (the least carpet).
,, 23. Ditto, female.
,, 24. Emmelesia sylvata (the waved carpet).
,, 25. Emmelesia Blomeri (Captain Blomer's rivulet).
,, 26. Emmelesia candidata (the small white wave).
,, 27. Emmelesia luteata (the small yellow wave).
,, 28. Emmelesia heparata (the dingy shell).

PLATE LXXII. 72

INSECTS. 1. Strenia clathrata (the latticed heath).
,, 2. Venilia maculata (the speckled yellow).
,, 3. Venilia ——— var. quadrimaculata (the pinion-spotted yellow).
,, 4. Ptychopoda dilutaria (the small fan-footed wave).
,, 5. Ptychopoda ——— var. fimbriolata.
,, 6. *Ptychopoda lividata (the single dotted wave).*
,, 7. Ptychopoda trigeminata (the treble brown spot).
,, 8. Ptychopoda trigeminata var. (bisetata).
,, 9. Ptychopoda ornata (the lace border).
,, 10. Ptychopoda incanata (the mullein wave).
,, 11. Ptychopoda ——— var. contiguaria (the tooth-striped wave).
,, 12. Ptychopoda immutata (the lesser cream wave).
,, 13. The Caterpillar.
,, 14. Ptychopoda rubricata.

PLATE LXXIII. 76

INSECTS. 1. Acidalia osseata (the dark cream wave).
,, 2. Acidalia—var. margine-punctata (the dotted bordered wave).
,, 3. Acidalia virgularia (the small dusty wave).
,, 4. Acidalia subsericeata (the satin wave).
,, 5. Acidalia aversata (the riband wave).
,, 6. Acidalia remutata (the false riband wave).
,, 7. Acidalia—var. inornata (the plain wave).
,, 8. Acidalia fumata (the smoky wave).
,, 9. Acidalia lactata (the pale cream wave).
,, 10. Acidalia—var. flos lactata (the cream wave).
,, 11. Pœcilophasia marginata (the clouded border).
,, 12. Variety.
,, 13. The Caterpillar.
,, 14. Chlorissa viridata (the small grass emerald).
,, 15. Chlorissa thymiaria (the common emerald).
,, 16. The Caterpillar.
,, 17. Chlorissa putataria (the little emerald).
,, 18. Timandra imitaria (the small blood vein).
,, 19. Timandra variegata (the subangled wave).
,, 20. Timandra emutaria (the dusky wave).

	FIG.		PAGE
INSECTS.	21.	Macaria notata (the peacock).	
,,	22.	The Caterpillar.	
,,	23.	Macaria alternata (the sharp angled peacock).	
,,	24.	Macaria liturata (the tawny barred angle).	
,,	25.	The Caterpillar.	
,,	26.	Ania emarginata (the scalloped double line).	
,,	27.	Ennomos flexula (the beautiful hook tip).	
,,	28.	Macaria limbata (the bordered cheque).	
,,	29.	Macaria præatomata (the dingy angled).	
,,	30.	Macaria subrufata (the slender-shaped rufous).	
,,	31.	Macaria unipunctata (the white spot).	

PLATE LXXIV. 82

INSECTS.	1.	Platypteryx lacertula (the scallop hook tip).	
,,	2.	The Caterpillar.	
,,	3.	Platypteryx,—var. Cultraria (the pale scallop hook tip).	
,,	4.	Drepana falcataria (the pebble hook tip).	
,,	5.	The Caterpillar.	
,,	6.	Derpana hamula (the oak hook tip).	
,,	7.	Derpana unguicula (the barred hook tip).	
,,	8.	Cilix compressa (the Chinese character).	
,,	9.	Hypena proboscidalis (the snout eggar likeness).	
,,	10.	The Caterpillar.	
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,,	12.	Hypena rostralis (the buttoned snout).	
,,	13.	The Caterpillar.	
,,	14.	Hypena palpalis (the dark snout).	
,,	15.	Hypena crassalis (the beautiful snout).	
,,	16.	Macrochilia cribralis (the dotted fan-foot).	
,,	17.	Pechipogon barbalis (the common fan-foot).	
,,	18.	The Caterpillar.	
,,	19.	Paracolax derivalis (the clay fan-foot).	
,,	20.	Paracolax tarsicrinalis (the fan-foot).	
,,	21.	Paracolax nemoralis (the small fan-foot).	

PLATE LXXV. 88

INSECTS.	1.	Œthia emortualis (the olive crescent).	
,,	2.	The Caterpillar.	
,,	3.	Colobochylia salicalis (the lesser bell).	
,,	4.	Synaphe angustalis (the small snout).	
,,	5.	Cledeobia albistrigalis (the white line snout).	
,,	6.	Cledeobia costæstrigalis (the dark line snout).	
,,	7.	Camptylochila undulalis (the waved tabby).	
,,	8.	Camptylochila bistrigalis (the twin-striped tabby).	
,,	9.	Aglossa pinguinalis (the large tabby).	
,,	10.	Aglossa cupreolatus (the small tabby).	
,,	11.	Aglossa dimidiatus (the tea tabby).	
,,	12.	Aglossa Streatfeildii (Streatfeild's tabby).	
,,	13.	Pyralis farinalis (the meal moth).	
,,	14.	Pyralis glaucinalis (the double striped).	
,,	15.	Pyralis pictalis (the painted-meal moth).	
,,	16.	Hypsopygia costalis (the gold fringe).	
,,	17.	Agrotera flammealis (the rosy-flounced).	

PLATE LXXVI. 92

INSECTS.	1.	Simaëthis Fabriciana (the autumn nettle-tap).	
,,	2.	Simaëthis pariana (the double barred nettle-tap).	
,,	3.	The Caterpillar.	
,,	4.	The Cocoon.	
,,	5.	Simaëthis lutosa (the early nettle-tap).	
,,	6.	Simaëthis Myllerana (Myller's nettle-tap).	
,,	7.	Simaëthis punctosa (the narrow silver-dotted).	
,,	8.	Anania octomaculata (the white spot).	
,,	9.	Ennychia anguinalis (the wavy-barred sable).	
,,	10.	Ennychia cingulata (the silver-barred sable).	
,,	11.	Ennychia rufo-fascialis (the flounced).	
,,	12.	Pyrausta purpuralis (the crimson and gold).	
,,	13.	Pyrausta punicealis (the purple and gold).	
,,	14.	The Caterpillar.	
,,	15.	Pyrausta ostrinalis (the scarce purple and gold).	
,,	16.	Pyrausta porphyrialis (the porphyry).	
,,	17.	Pyrausta cespitalis (the straw-barred).	
,,	18.	Pyrausta sordidalis (the dingy straw-barred).	
,,	19.	Diasemia literalis (the lettered China mark).	
,,	20.	Hydrocampa potamogata (the brown China mark).	
,,	21.	Hydrocampa Nymphæata (the beautiful China mark).	
,,	22.	The Caterpillar.	
,,	23.	The Caterpillar in its sheath or case.	
,,	24.	Cataclysta lemnata (the small China mark).	
,,	25.	The Female.	
,,	26.	Paraponyx stratiotata (the ringed China mark).	
,,	27.	Phlyctoenia sambucalis (the garden China mark).	
,,	28.	The Caterpillar.	
,,	29.	Eudioptis lucernalis (the transparent China mark).	
,,	30.	Nomophila hybridalis (the rush veneer).	

PLATE LXXVII. 98

INSECTS.	1.	Eurrhypara urticata (the small magpie).	
,,	2.	The Caterpillar.	
,,	3.	Mesographe forficalis (the garden pebble).	
,,	4.	The Caterpillar.	
,,	5.	Margaritia diversalis (the yellow under-winged pearl).	
,,	6.	Margaritia asinalis (the dingy pearl).	
,,	7.	Margaritia lancealis (the long-winged pearl).	
,,	8.	Margaritia verticalis (the mother-of-pearl).	
,,	9.	Margaritia centro-strigalis (the central-striped pearl).	
,,	10.	Magaritia cinctalis (the lesser pearl).	
,,	11.	Margaritia palealis (the sulphur).	
,,	12.	Margaritia hyalinalis (the scarce pearl).	
,,	13.	Margaritia angustalis (the narrow-winged pearl).	
,,	14.	Margaritia terminalis (the bordered pearl).	
,,	15.	Margaritia glabralis (the dingy pearl).	
,,	16.	Margaritia pallidalis (the delicate pearl).	
,,	17.	Margaritia flavalis (the gold China mark).	
,,	18.	Margaritia ochrealis (the small straw China mark).	
,,	19.	Nascia cilialis (the orange cloud).	
,,	20.	Margaritia ferrugalis (the rusty dot).	

PLATE LXXVIII. 102

INSECTS.	1.	Margaritia fulvalis (the fulvous dot).	
,,	2.	Margaritia verbascalis (the rusty China mark).	

	FIG.		PAGE
INSECTS	3.	Margaritia longipedalis (the long-legged pearl).	
,,	4.	Margaritia pulveralis (the dusted pearl).	
,,	5.	Margaritia fuscalis (the cinereous pearl).	
,,	6.	Margaritia fimbrialis (the edged pearl).	
,,	7.	Margaritia institialis (the pale straw).	
,,	8.	Margaritia stramentalis (the chequered straw).	
,,	9.	Margaritia margaritalis (the clouded yellow pearl).	
,,	10.	The Caterpillar.	
,,	11.	Margaritia sericealis (the straw dot).	
,,	12.	Margaritia alpinalis (the Alpine pearl).	
,,	13.	Margaritia sticticalis (the diamond spot).	
,,	14.	Margaritia olivalis (the white brindled).	
,,	15.	Margaritia prunalis (the clouded pearl).	
,,	16.	The Caterpillar.	
,,	17.	Cyneda dentalis (the starry brindled).	
,,	18.	The Caterpillar.	
,,	19.	Nola strigulalis (the least black arches).	
,,	20.	Nola monachalis (the small black arches).	
,,	21.	Nola cucullatella (the short cloaked).	
,,	22.	Nola fuliginalis (the dusky cloaked).	
PLANT.	23.	Echium vulgare (common bugloss).	

PLATE LXXIX. 108

INSECTS.	1.	Hylophila prasinana (green silver lines).	
,,	2.	The Caterpillar.	
,,	3.	The Cocoon.	
,,	4.	Hylophila quercana (scarce silver lines).	
,,	5.	The Caterpillar.	
,,	6.	The Chrysalis.	
,,	7.	Earis chlorana (small green oak).	
,,	8.	The Caterpillar.	
,,	9.	The Cocoon.	
,,	10.	Tortrix viridana (pea green).	
,,	11.	Tortrix palleana (plain yellow).	
,,	12.	Tortrix virburnana (viburnian).	
,,	13.	Tortrix Pillerana (Piller's).	
,,	14.	The female.	
,,	15.	Tortrix galiana (the glossy golden brown).	
,,	16.	The Female.	
,,	17.	Lozotœnia Forsterana (Forster's).	
,,	18.	Lozotœnia sorbiana (the hazel tortrix).	
,,	19.	Lozotœnia heparana (the dark oblique bar).	
,,	20.	Lozotœnia cinnamoneana (the cinnamon).	
,,	21.	Lozotœnia ribeana (the common oblique bar).	
,,	22.	Lozotœnia grossulareana (gooseberry).	
,,	23.	Lozotœnia cerasana (the hollow oblique bar).	
,,	24.	The Caterpillar.	
,,	25.	The Cocoon.	
,,	26.	Lozotœnia corylana (great chequered).	
,,	27.	Lozotœnia croceana (saffron).	
,,	28.	Lozotœnia lævigana (glossy oblique bar).	

PLATE LXXX. 110

INSECTS.	1.	Lozotœnia nebulana (the rose tortrix).	
,,	2.	Lozotœnia subocellana (the ocellated oblique bar).	
,,	3.	Lozotœnia rosana (the great brown).	
,,	4.	Lozotœnia cratægana (the hazel-barred).	
,,	5.	Lozotœnia oporana (the great hook-tip).	
,,	6.	Lozotœnia xylosteana (the forked red-bar).	
,,	7.	Lozotœnia roborana (the oak red-bar).	
,,	8.	Lozotœnia obliquana (the oblique bar).	
,,	9.	Lozotœnia costana (the straw oblique bar).	
,,	10.	Lozotœnia biustulana (the double-spotted oblique bar).	
,,	11.	Lozotœnia Modeeriana (Modeer's bar).	
,,	12.	Lozotœnia acerana (the maple).	
,,	13.	Lozotœnia trifasciana (the afternoon tortrix).	
,,	14.	Lozotœnia Grotiana (the Grotian tortrix).	
,,	15.	Lozotœnia ochreana (the saffron).	
,,	16.	Lozotœnia cruciana (the red cross).	
,,	17.	Lozotœnia Holmiana (the Holmian).	
,,	18—19.	The Caterpillars.	
,,	20.	Lozotœnia Schreberiana (the Schreberian).	

PLATE LXXXI. 114

INSECTS.	1.	Philedone Gerningiana (the Gerningian).	
,,	2.	Philedone Walkerana (the Walkerian).	
,,	3.	Pædisca rotundana (round tipped red-bar).	
,,	4.	Pædisca angustiorana (narrow winged red-bar).	
,,	5.	Pædisca sylvana (the red blotch-back).	
,,	6.	Pædisca porphyrana (bright oblique barred).	
,,	7.	Pædisca nebulana (clouded iron).	
,,	8.	Pædisca Wellensiana (the barred blotch-back).	
,,	9.	Pædisca æthiopiana (the Negro).	
,,	10.	Pædisca scriptana (the short barred white).	
,,	11.	Pædisca semifasciana (the short barred grey).	
,,	12.	Anthithesia corticana (the marbled long cloak).	
,,	13.	Anthithesia betulana (the birch long cloak).	
,,	14.	Anthithesia tripunctana (the common long cloak).	
,,	15.	Anthithesia pruniana (the lesser long cloak).	
,,	16.	The Caterpillar.	
,,	17.	Anthithesia pullana (the dingy marbled).	
,,	18.	Anthithesia marginana (the bordered long cloak).	
,,	19.	Anthithesia oblongana (the narrow long cloak).	
,,	20.	Anthithesia gentianæana (the Gentian).	
,,	21.	The Caterpillar.	
,,	22.	Anthithesia salicella (the white backed).	

PLATE LXXXII. 118

INSECTS.	1.	Spilonota nubiferana (the clouded white).	
,,	2.	Spilonota cynostabella (the black cloaked).	
,,	3.	The Caterpillar.	
,,	4.	Spilonota aquana (the brown cloaked).	
,,	5.	The Caterpillar.	
,,	6.	Spilonota trimaculana (the triple blotched).	
,,	7.	Spilonota comitana (the cream short-cloaked).	
,,	8.	Spilonota fœnella (the white foot).	
,,	9.	Spilonota Pflugiana (the Pflugian).	
,,	10.	Spilonota Strœmiana (the Strœmian).	
,,	11.	Spilonota rusticana (the tawny blotch back).	
,,	12.	Spilonota trigeminana (the three spotted).	
,,	13.	Spilonota sticticana (the brown blotch back).	
,,	14.	Spilonota costipunctana (the lesser blotch back).	
,,	15.	Spilonota argyrana (the silver blotched back).	

FIG. PAGE

INSECTS. 16. Spilonota quadrana (the Highland blotch back).
„ 17. Spilonota tetragonana (the four-angled blotch back).
„ 18. Spilonota nigricostana (the black-edged marble).
„ 19. Spilonota ustulana (the scorched blunt wing).
„ 20. Heusimene fimbriana (the brown bordered).

PLATE LXXXIII. 122

INSECTS. 1. Pseudotomia obscurana (the obscure blotch back).
„ 2. Pseudotomia fraternana (the ashy silver barred).
„ 3. Pseudotomia nigro-punctana (the black dotted).
„ 4. Pseudotomia atromargana (the black bordered).
„ 5. Pseudotomia strobilella (the light silver striped).
„ 6. Pseudotomia sequana (the silver blotch back).
„ 7. Pseudotomia Petiverella (the Petiverian).
„ 8. Pseudotomia lunulana (the crescent).
„ 9. Pseudotomia simpliciana (the plain silver fringed).
„ 10. Pseudotomia Jacquiniana (the Jacquinian).
„ 11. Pseudotomia strigana (the plain gold fringed).
„ 12. Pseudotomia atropurpurana (the purple black).
„ 13. Pseudotomia nigricana (the black striped edge).
„ 14. Pseudotomia obscurana (the dingy).
„ 15. Pseudotomia proximana (the pale brown striped edge).
„ 16. Pseudotomia puncticostana (the sector spotted).
„ 17. Pseudotomia populana (the pigmy Y).
„ 18. Pseudotomia Ephippana (the three angled blotch back).
„ 19. Pseudotomia Trauniana (the Traunian).
„ 20. Pseudotomia notata (the black and white).
„ 21. Pseudotomia Compositella (the triple striped blotch back).
„ 22. Pseudotomia Gundiana (the Gundian).
„ 24. Pseudotomia Lediana (the Ledean).
„ 25. Pseudotomia nitidana (the dark silver striped).
„ 26. Pseudotomia aurana (the double orange spot).
PLANT. 27. Agrostemma gittago (common corn cockle).

PLATE LXXXIV. 126

INSECTS. 1. Steganoptycha tetraquetrana (the square barred single dot).
„ 2. Steganoptycha angulana (the angle striped single dot).
„ 3. Steganoptycha unipunctana (the marbled single dot).
„ 4. Steganoptycha triquetrana (the angle barred single dot).
„ 5. Steganoptycha Bœberana (the Bœberian).
„ 6. Steganoptycha pavonana (the blotch backed grey).
„ 7. Steganoptycha cuspidana (the pointed bar).
„ 8. Steganoptycha rhombifasciana (the square bar).
„ 9. Steganoptycha cinereana (the mottled grey).
„ 10. Steganoptycha stictana (the spotted red).
„ 11. Steganoptycha retusana (the variable red).
„ 12. Steganoptycha subuncana (the Red Hook-tip).
PLANT. 13. Lychnis flos-cuculi (the cuckoo flower or ragged robin).

PAGE

PLATE LXXXV. 128

FIG.

INSECTS. 1. Anchylopera obtusana (the blunt-winged blotch back).
„ 2. Anchylopera unculana (the hook-tipped blotch back).
„ 3. Anchylopera Lundiana (the Lundian).
„ 4. Anchylopera Lyellana (Lyell's).
„ 5. Anchylopera fractifasciana (the broken-barred).
„ 6. Anchylopera siculana (the hook-tipped streak).
„ 7. The Caterpillar.
„ 8. The Caterpillar in another stage.
„ 9. Anchylopera diminutana (the festoon Tortrix).
„ 10. Anchylopera funulana (the dark festoon).
„ 11. Anchylopera uncana (the bridge).
„ 12. Anchylopera ustomaculana (the Loch Ranoch).
„ 13. Anchylopera biarcuana (the double-arched).
„ 14. Anchylopera derasana (the naked winged).
„ 15. Anchylopera cuspidana (the sharp angled).
„ 16. Philalcea ramella (the hooked marble).
„ 17. The Caterpillar.
„ 18. Philalcea nigromaculana (the beautiful marble).
„ 19. Philalcea nevana (the spotted short cloak).
„ 20. Philalcea sociana (the white short cloak).
„ 21. Philalcea amœnana (the marbled short cloak).
„ 22. Philalcea Paykulliana (the Paykullian).
„ 23. Philalcea fimbriana (the double crescent).
„ 24. A variety.
„ 25. Philalcea bilunana (the hoary double crescent).
„ 26. Philalcea subocellana (the retuse marble).
„ 27. Philalcea asseclana (the obtuse marble).
„ 28. Philalcea Mitterbacheriana.
„ 29 & 30. Varieties (the Mitterbachian).
PLANT. 31. Rhamnus catharticus (Buckthorn).

PLATE LXXXVI. 134

INSECTS. 1. Roxana arcuana (the arched).
„ 2. Carpocapsa pomonella (the codling moth).
„ 3. The Caterpillar.
„ 4. Carpocapsa splendana (the splendid).
„ 5. Carpocapsa grossana (the smoky marble).
„ 6. Carpocapsa aspidiscana (the spotted).
„ 7. Carpocapsa Wœberana (the Weberian).
„ 8. The Caterpillar.
„ 9, 10, & 11. Chrysalis.
„ 12. Carpocapsa Rheediella (the Rheedian).
„ 13. Carpocapsa ulicetana (the light-striped edge).
„ 14. Carpocapsa hypericana (the yellow-striped edge).
„ 15. The Caterpillar.
„ 16. Carpocapsa Leplastriana (the Leplastrian).
„ 17. Carpocapsa perlepidana (the beautiful crescent).
„ 18. Carpocapsa juliana (Bentley's marble Tortrix).
PLANT. 19. Hypericum pulchrum (St. John's Wort).

PLATE LXXXVII. 136

INSECTS. 1. Carpocapsa stelliferana (the starry Tortrix).
„ 2. Carpocapsa pupillana (the Wormwood Tortrix).
„ 3. Carpocapsa fulvana (the fulvous-sealed).
„ 4. Carpocapsa cana (the hoary-sealed).
„ 5. Carpocapsa Scopoliana (the Scopolian).

FIG. PAGE

INSECTS. 6. Carpocapsa rufana (the red-sealed).
„ 7. Bactra egenana (the dusty drab).
„ 8. Bactra pauperana (the spotted drab).
„ 9. Bactra egestana (the lesser drab).
„ 10. Bactra fuscana (the brown drab).
„ 11. Ablabia expallidana (the pale drab).
„ 12. Bactra uliginosana (the darkling drab).
„ 13. Ablabia quadripunctana (the dotted drab).
PLANT. Pyrus domestica (true-service tree).

PLATE LXXXVIII. 140

INSECTS. 1. Cnephasia asinana (the large grey elm).
„ 2. Cnephasia longana.
„ 3. Pale variety (the long-winged).
„ 4. Cnephasia ictericana.
„ 5. Variety (the jaundiced drab).
„ 6. Cnephasia sinuana (the waved elm).
„ 7. Cnephasia Penziana (the Penzian).
„ 8. Cnephasia interjectana (the lesser grey elm).
„ 9. Cnephasia Logiana (the Logian).
„ 10. Cnephasia obsoletana (the obscure elm).
„ 11. Cnephasia rectifasciana (the straight-barred elm).
„ 12. Cnephasia curvifasciana (the curve-barred elm).
„ 13. Cnephasia littoralis (the mottled coast Tortrix).
„ 14. Cnephasia nubilana (the smoky grey).
„ 15. Cnephasia perfuscana (the deep brown).
„ 16. Cnephasia cinerana (the pale ash).
PLANT. 17. Saxifraga geum (kidney-leaved saxifrage).

PLATE LXXXIX. 144

INSECTS. 1. Sericoris quadrimaculana (the blotched drab).
„ 2. Sericoris striana (the straight-barred).
„ 3. Sericoris fasciolana (the small barred).
„ 4. Sericoris urticana (the barred nettle).
„ 5. Sericoris micana (the silver dotted).
„ 6. A common variety.
„ 7. Sericoris alternana (the alternate barred).
„ 8. Sericoris undulana (the silver striped).
„ 9. Sericoris gramineana (the great barred).
„ 10. Sericoris cespitana (the meadow-barred).
„ 11. Sericoris politana (the red barred grey).
„ 12. Sericoris pulchellana (the dark barred grey).
„ 13. Sericoris fuligana (the smoky barred).
„ 14. Sericoris subsequana (the faint silver striped).
„ 15. Sericoris myrtillana (the bilberry).
„ 16. Sericoris aurofasciana (the gold barred).
„ 17. Sericoris bifasciana (the double-barred orange).
„ 18. Sericoris furfurana (the mottled bran).
„ 19. Sericoris marmorana (the marbled dog's tooth).
PLANT. 20. Silene inflata (the inflated catchfly).

PLATE XC. 146

INSECTS. 1. Notocelia Udmanniana (the Udmannian).
„ 2. Pœcilochroma Solandriana (the Solandrian).
„ 3. Pœcilochroma trapezana.
„ 4. A pale variety.
„ 5. A medium variety.

FIG. PAGE

INSECTS. 6. The Caterpillar.
„ 7. Pœcilochroma communana (the marbled diamond back).
„ 8. Light variety (the cock's head).
„ 9. Pœcilochroma piceana (the shining pitch).
„ 10. Pœcilochroma vittana (the Niton Tortrix).
„ 11. Pœcilochroma semifuscana (the half brown).
„ 12. Pœcilochroma maculana (the black double-blotched).
„ 13. Pœcilochroma maurana (the great double bar).
„ 14. Ptycholoma Lecheana (the Lechean).
„ 15. Ptycholoma obsoletana (the obsolete).

PLATE XCI. 150

INSECTS. 1. Euchromia purpurana (the purple).
„ 2. Euchromia fulvipunctana (the tawny-dotted).
„ 3. Euchromia ericetana (dark var.).
„ 4. Light variety.
„ 5. Lophoderus ministranus (the yellow-barred iron).
„ 6. Lophoderus subfascianus (the pale-barred iron).
„ 7. Sarrothripus degeneranus.
„ 8. The Caterpillar.
„ 9. The Cocoon.
„ 10. The Chrysalis (the large marbled).
„ 11. Sarrothripus undulanus (the waved-marbled).
„ 12. Sarrothripus dilutanus (the large brown).
„ 13. Sarrothripus Lathamianus (the Lathamian).
„ 14. Sarrothripus ilicanus (the large holly).
„ 15. Sarrothripus Afzelianus (the Afzelian).
„ 16. Sarrothripus ramosanus (the twigged bar).
„ 17. Sarrothripus Stonanus (Mr. Stone's bar).

PLATE XCII. 152

INSECTS. 1. Peronea profanana (the rusty button).
„ 2. Peronea semiustana (the half scorched).
„ 3. Peronea striana (the brown button).
„ 4. Peronea substriana (the striped button).
„ 5. Peronea Bentleyana (Bentley's button).
„ 6. Peronea vittana (the streaked button).
„ 7. Peronea spadiceana (the bay-shouldered button).
„ 8. Peronea brunneana (the brown button).
„ 9. Peronea Desfontainana (the Desfontainian).
„ 10. Peronea consimilana (the pale bay button).
„ 11. Peronea fulvocristana (the tawny-crested button).
„ 12. Peronea albovittana (the white-streaked button).
„ 13. Peronea fulvovittana (the tawny-streaked button).
„ 14. Peronea cristalana (the barred button).

PLATE XCIII. 154

INSECTS. 1. Peronea subcristalana (the dull button).
„ 2. Peronea cristana (the white button).
„ 3. Peronea albipunctana (the white spotted button).
„ 4. Peronea Chantana (Chant's button).
„ 5. Peronea subvittana (the obscure streaked button).
„ 6. Peronea insulana (the insulated button).
„ 7. Peronea divisana (the half-coloured button).
„ 8. Peronea strigana (the streaked buff-edge).

FIG. PAGE
INSECTS. 9. Peronea radiana (the buff-edged).
„ 10. Peronea centrovittana (the centre-streaked button).
„ 11. Peronea ramostriana (the branched button).
„ 12. Peronea combustana (the flame button).
„ 13. Peronea albistriana (the grey streak).
PLANT. 14. Lysimachia nemorum (wood loosestrife).

PLATE XCIV. 156

INSECTS. 1. Peronea autumnana (the autumnal button).
„ 2. Peronea ruficostana (the red-edged button).
„ 3. Peronea alboflammana (the white dash).
„ 4. Peronea coronana (the marbled chestnut).
„ 5. Peronea Byringerana (the Byringerian).
„ 6. Peronea umbrana (the dark-streaked button).
„ 7. Peronea leucophæana (the black dash).
„ 8. Peronea subcristana (the half-crested button).
„ 9. Peronea marmorana (the silver grey).
„ 10. Peronea latifasciana (the broad-barred).
„ 11. Peronea favillaceana (the ash-coloured).
„ 12. Peronea reticulana (the chequered-grey).
„ 13. Peronea tristana (the lesser ash-coloured).
PLANT. 14. Primula farinosa (bird's-eye primrose).

PLATE XCV. 160

INSECTS. 1. Peronea albicostana (the white-edged button).
„ 2. Peronea bistriana (the double-bay streak).
„ 3. Peronea similana (the pale-edged button).
„ 4. Peronea plumbana (the lead-coloured).
„ 5. Peronea trigonana (the three-dotted), Boscana of Haworth.
„ 6. Peronea Logiana (the Logian).
„ 7. Peronea Schalleriana (the Schallerian).
„ 8. Peronea rufana (the red triangle).
„ 9. Peronea asperana (the white-shouldered).
„ 10. A new variety of asperana.
„ 11. Peronea borana (the crested buff).
„ 12. Peronea variegana.
„ 13. A dark variety (the common rough-wing).
„ 14. Peronea obsoletana (the obscure button).
„ 15. Peronea Leachiana (the Leachian).
„ 16. Peronea capucina.
„ 17. Peronea albana.
PLANT. 18. Galeobdolon luteum (yellow archangel).

PLATE XCVI. 162

INSECTS. 1. Acleris costimaculana.
„ 2. Acleris aspersana.
„ 3. A small variety.
„ 4. Acleris gnomana.
„ 5. A speckled variety (the dial).
„ 6. Acleris tripunctulana (the rusty treble spot).
„ 7. Acleris bifidana (the forked stripe).
„ 8. Acleris cerusana (the white treble spot).
„ 9. Aclêris scabrana (the grey rough wing).
„ 10. Leptogramma literana (the black-sprigged green).
„ 11. Leptogramma squamana (the green-tufted).
„ 12. Leptogramma irrorana (the sprinkled green).
FIG. PAGE
INSECTS. 13. Leptogramma tricolorana (the tri-coloured green).
„ 14. Leptogramma fulvomixtana (the tawny and green).
PLANT. 15. Lychnis diurna (the red-flowered lychnis).

PLATE XCVII. 164

INSECTS. 1. Teras emargana (the chequered notch-wing).
„ 2. Teras excavana (the iron notch-wing).
„ 3. Teras effractana (the common notch-wing).
„ 4. Teras caudana.
„ 5. Caterpillar (the mallow notch-wing).
„ 6. Teras ochracea (the pale ochre notch-wing).
„ 7. Dictyopteryx contaminana (the chequered pebble).
„ 8. Dictyopteryx ciliana (the white-fringed).
„ 9. Dictyopteryx rhombana (the dark chequered).
„ 10. Dictyopteryx plumbana (the clouded straw).
„ 11. Dictyopteryx Læflingiana (the Læflingian).
„ 12. Dictyopteryx Forskaliana (the Forskalian).
„ 13. Dark variety.
„ 14. Capua ochraceana (the ochreous).
PLANT. 15. Cynosurus cristatus (crested dog's-tail grass).

PLATE XCVIII. 168

INSECTS. 1, 2. Cheimatophila castaneana (the chestnut).
„ 3. Argyrotoza Bergmanniana (the Bergmannian).
„ 4. Argyrotoza Hoffmanseggiana (the Hoffmanseggian).
„ 5. Argyrotoza Conwayana (the Conwayian).
„ 6. Argyrotoza subaurantiana (the gold-varied).
„ 7. Argyrotoza Daldorfiana (the Daldorfian).
„ 8. Argyrotoza apicalis (the clay-tipped).
„ 9. Argyrolepia Lathoniana (the silver-spotted).
„ 10. Argyrolepia margaritana (the orange-barred pearl).
„ 11. Argyrolepia æneana (the silver broad bar).
„ 12. Argyrolepia bistrigana (the two-striped).
„ 13, 14. Argyrolepia tesserana (the tessellated).
„ 15. Argyrolepia decimana (the ten-dotted).

PLATE XCIX. 170

INSECTS. 1. Orthotænia Turionana (the orange-spotted).
„ 2. The Caterpillar.
„ 3. Orthotænia geminana (the scarce orange-spotted).
„ 4. The Caterpillar.
„ 5. A disease in the pine caused by the Caterpillar.
„ 6. Moth in repose.
„ 7. Orthotænia Bentleyana (the Bentleyan).
„ 8. Orthotænia Haworthana (the silver-marbled).
„ 9. Orthotænia resinella (the spotted pine).
„ 10. Orthotænia pinetana.
„ 11. Orthotænia lepidana.
„ 12. Orthotænia comitana (the streaked pine).
„ 13. Small dark variety.
„ 14. Orthotænia piceana.
„ 15. Rhyacionia Hastiana (the Hastian).
„ 16. Rhyacionia flavofasciana.
PLANT. 17. A branch of pine, showing the manner in which the caterpillars feed and injure the young shoots.

PLATE C. PAGE 172

FIG.
INSECTS. 1. Eupœcilia maculosano.
„ 2. A dark variety (the small black spotted).
„ 3. Eupœcilia dubitana (the doubtful).
„ 4. Eupœcilia augustana (the barred marble).
„ 5. Eupœcilia nana (the barred dwarf).
„ 6. Eupœcilia pygmæana (the dingy dwarf).
„ 7. Eupœcilia permixtana (the orange and black).
„ 8. Eupœcilia sodaliana (the brindled marble).
„ 9. Phtheochroa rugosana (the rough wing).
„ 10. Cochylis roseana (the rosy).
„ 11. Cochylis subroseana (the dingy rosy).
„ 12. Cochylis ruficiliana (the red fringe).
„ 13. Cochylis griseana (the obliqne barred gray).
„ 14. Cochylis rupicola (the chalk cliff Tortrix).
„ 15. Cochylis Vectisana (the Isle of Wight Cochylis).
PLANT. 16. Aira Alpina (smooth alpine hair grass).

PLATE CI. 176

INSECTS. 1. Lozopera alternana (the alternate-barred Tortrix).
„ 2. Lozopera Dubrisana (the Dover straw).
„ 3 & 4. Small varieties of ditto.
„ 5. Lozopera marmoratana (the marbled straw).
„ 6. Lozopera straminea (the short-barred straw).
„ 7. Lozopera Smeathmanniana (the Smeathmannian).
„ 8. Lozopera Francillana (the Francillanian).
„ 9. Lozopera badiana (the chestnut straw).
„ 10. Lozopera Baumanniana (the Baumannian).
„ 11. Xanthosetia Zœgana (the Zœgian).
„ 12. Xanthosetia ferrugana (the clouded iron).
„ 13. Xanthosetia hamana (the hook-marked straw).
„ 14. Xanthosetia diversana (the crossed straw).
„ 15. Xanthosetia inopiana (the plain drab).
„ 16. Xanthosetia Luteolana.
„ 17. Phibalocera Quercana (the long-horned).
„ 18. Hypercallia Christiernana (the Christiernian).
PLANT. 19. Cynosurus cristatus (Crested Dog's-tail grass).

PLATE CII. 180

INSECTS. 1. Orthotœlia venosa (the dark-veined long-winged).
„ 2. Depressaria Heracleana (the cow-parsnip).
„ 3. Depressaria umbellana (the large-streaked).
„ 4. Depressaria venosa (the wainscot flat body).
„ 5. Depressaria nervosa (the coarse waistcoat).
„ 6. Depressaria apicella (the brindled flat body).
„ 7. Depressaria badiella (the brown-brindled flat body).
„ 8. Depressaria characterosa (the lesser flat body).
„ 9. Depressaria carduella (the thistle flat body).
„ 10. Depressaria pulverella.
„ 11. Depressaria Sparmanniana (the straw coloured).
„ 12. Depressaria immaculana (the spotless flat body).
„ 13. Depressaria Yeatsiana (the Yeatsian).
„ 14. Depressaria ocellana (the red letter).
PLANT. 15. Rosa villosa (the apple-bearing rose).

PLATE CIII. PAGE 182

FIG.
INSECTS. 1. Depressaria applana (the common flat body).
„ 2. Depressaria putridella (the brown veined).
„ 3. Depressaria atomella (the powdered).
„ 4. Depressaria costosa (the dingy straw).
„ 5. Depressaria Alstrœmeriana (the Alstrœmerian).
„ 6. Depressaria irrorella (the dusted flat body).
„ 7. Depressaria liturella (the purple flat body).
„ 8. Depressaria Bluntii (Blunt's flat body).
„ 9. Depressaria purpurea (the lesser purple).
„ 10. Depressaria albipunctella (the rufous brindled).
„ 11. Depressaria Damella.
„ 12. Depressaria gilvella (the brindled straw).
„ 13. Depressaria curvipunctosa (the curve-dotted).
„ 14. Depressaria propinquella.
„ 15. Anacampsis Malvella.
„ 16. The Caterpillar.
PLANT. 17. The larva of Anacampsis Malvella is represented on a species of Mallow; as figured by Fisher.

PLATE CIV. 184

INSECTS. 1. Anacampsis juniperella (the juniper).
„ 2. The Caterpillar.
„ 3. Anacampsis laticinctella (the poplar).
„ 4. ———— variety.
„ 5. ———— the caterpillar.
„ 6. Anacampsis rusticella (the dusted black).
„ 7. Anacampsis longicornis (the long-horned).
„ 8. Anacampsis Listerella (the Listerian).
„ 9. Anacampsis nebulea (the dotted brown).
„ 10. Anacampsis Betulea (the birch).
„ 11. Anacampsis rhombella (the black speckled grey).
„ 12. Anacampsis cinerella (the cinereous).
„ 13. Anacampsis Ericæ.
„ 14. Anacampsis zephyrella (the powdered grey).
„ 15. Anacampsis terrella (the subcinereous).
„ 16. The Caterpillar.
„ 17. Anacampsis lutarea (the clay-coloured).
„ 18. Anacampsis annulicornis (the ring-horned).
„ 19. Anacampsis sericornis.
„ 20. Anacampsis dodecella (the small black speckled grey).
„ 21. Anacampsis Mouffetella (the dotted grey).
„ 22. Anacampsis aspera (the rough).
„ 23. Anacampsis domestica (the domestic).

PLATE CV. 188

INSECTS. 1. Anacampsis affinis (the brindled brown).
„ 2. Anacampsis diffinis (the greater brindled brown).
„ 3. Anacampsis lactœella (the cream-shouldered).
„ 4. Anacampsis sarcitella (the white-shouldered).
„ 5. Anacampsis lanceolella (the black-dotted woollen).
„ 6. Anacampsis Hübneri (the Hübnerian).
„ 7. Anacampsis contigua (the light-brindled brown).
„ 8. Anacampsis sequax (the dark-brindled brown).
„ 9. Anacampsis proxima (the beautiful brindled-brown).
„ 10. Anacampsis tricolorella (the tri-coloured).
PLANT. 11. Epimedium Alpinum (Alpine Barrenwood).

PLATE CVI. PAGE 188

	FIG.	
INSECTS.	1.	Anacampsis luctuella (the crescent-shouldered).
,,	2.	Anacampsis subrosea (the little blossom).
,,	3.	Anacampsis decorella (the neat).
,,	4.	Anacampsis marmorea (the beautiful marble).
,,	5.	Anacampsis guttifera (the white-dotted black).
,,	6.	Anacampsis atra (the little black).
,,	7.	Anacampsis subocellea (the eyelet).
,,	8.	Anacampsis maculella (the short-barred white).
,,	9.	Anacampsis tremella (the horseshoe).
,,	10.	Anacampsis Lyellella.
PLANT.	11.	Anemone ranunculoides (yellow-wood Anemone).

PLATE CVII. 190

INSECTS.	1.	Anacampsis nivella (the black-dotted white).
,,	2.	Anacampsis aleella (the black-clouded).
,,	3.	Anacampsis interruptella (the brown streak).
,,	4.	Anacampsis fulvescens (the tawny).
,,	5.	Anacampsis fuscescens (the faint-dotted brown).
,,	6.	Anacampsis alternella (the black-spotted white).
,,	7.	Anacampsis angustella (the black-spotted brimstone).
,,	8.	Anacampsis albimaculea (the white-spotted black).
,,	9.	Anacampsis quadripuncta (the four-spotted).
,,	10.	Anacampsis bifasciella (the two-banded).
,,	11.	Anacampsis padifoliella.
,,	12.	Anacampsis fugacella.
,,	13.	Anacampsis Æthiops.
,,	14.	Anacampsis fuscipennis.
,,	15.	Anacampsis costella.
PLANT.	16.	Chlora perfoliata (yellow wort).

PLATE CVIII. 192

INSECTS.	1.	Lophonotus fasciculellus (the prominent Tinea).
,,	2.	Acria emarginella (the notch-winged).
,,	3.	Chelaria rhomboidella (the lobster-clawed).
,,	4.	Cleodora silacella (the dingy straw).
,,	5.	Cleodora rufescens (the dwarf wainscot).
,,	6.	Cleodora nebulea (the clouded wainscot).
,,	7.	Cleodora ochroleucella (the pale ochreous wainscot).
,,	8.	Cleodora lucidella (the lucid wainscot).
,,	9.	Cleodora falciformis (the hook-tipped).
,,	10.	Acompsis unitella (the brown gold).
,,	11.	Acompsis cinerella (the ash-coloured).
,,	12.	Acompsis tinctella (the tinted).
,,	13.	Macrochila fasciella (the long-winged).
,,	14.	Macrochila parenthesella (the parenthesis).
,,	15.	Macrochila marginella (the white-bordered).
,,	16.	Macrochila bicostella (the light streak).
PLANT.	17.	Gentiana amarella (bitter Gentian).

PLATE CIX. 194

INSECTS.	1.	Aplota palpella (the dingy streak).
,,	2.	Macrochila Robertsonella (the Robertsonian).
,,	3.	Enicostoma Thunbergana (the Thunbergian).
,,	4.	Alabonia Geoffroyella (the Geoffroyian).

	FIG.		PAGE
INSECTS.	5.	Œcophora Oliviella (the Olivierian).	
,,	6.	Œcophora sulphurella (the yellow underwing).	
,,	7.	Adela Latreillella (the Latreillian).	
,,	8.	Adela Sultzella (the Sultzian).	
,,	9.	Adela Degeerella (the Degeerian).	
,,	10.	Adela fasciella (the copper japan).	
,,	11.	Adela cuprella (the scabious long-horn).	
,,	12.	Adela viridella (the green long-horn).	
,,	13.	Adela Frischella (the Frischian).	
,,	14.	Adela Swammerdamella (the Swammerdamian).	
,,	15.	Adela Panzerella (the Panzerian).	
,,	16.	Adela Robertella (the pale brown long-horn).	
PLANT.	17.	The Rock Cress.	

PLATE CX. 198

INSECTS.	1.	Cochleophasia tessellea (the pale tessellated brown).
,,	2.	The Female.
,,	3.	Cochleophasia pubicornis (the pale downy-horned).
,,	4.	Oporinia tortricella (the pale chequered).
,,	5.	Oporinia nubilea (the clouded brown).
,,	6.	Oxypate gelatella (the autumnal dagger).
,,	7.	Dasystoma salicella (the rosy-day).
,,	8.	Cheimophila Phryganella (the drab-day).
,,	9.	Diurnea Fagella (the March dagger).
,,	10.	A large variety.
,,	11.	Female.
,,	12.	Diurnea Novembris (the November dagger).
,,	13.	Semioscopis Avellanella (the hazel).
,,	14.	Semioscopis Steinkelnerana (the Steinkelnerian).
,,	15.	Anesychia Echiella (the bordered Ermine).
,,	16.	Anesychia pusiella (the beautiful Ermine).
,,	17.	Anesychia dodecea (the scarce Ermine).
,,	18.	Anesychia funerella (the Funereal).
,,	19.	Anesychia cristella.
,,	20.	Yponomeuta Evonymella (the full-spotted Ermine).
,,	21.	Yponomeuta irrorella (the Surrey Ermine).
,,	22.	Yponomeuta cognatella (the allied Ermine).
,,	23.	Yponomeuta rosella (the few-spotted Ermine).
,,	24.	Yponomeuta padella (the common Ermine).
,,	25.	Yponomeuta plumbella (the Kent Ermine).

PLATE CXI. 202

INSECTS.	1.	Telea Curtisella (the Curtisian).
,,	2.	Telea ambiguella (the small brown bar).
,,	3.	Telea Cratægella (the whitethorn bar).
,,	4.	Telea leucatella (the small white bar).
,,	5.	Telea comptella (the peacock's feather).
,,	6.	Telea lutarella (the muddy ermine).
,,	7.	Telea subfasciella (the slight barred).
,,	8.	Telea cæsiella (the purple-edged).
,,	9	Ederesa semifusca (the long-winged white-back).
,,	10.	Ederesa mendicella (the purple white-back).
,,	11.	Ederesa albistria (the purple white-streak).
,,	12.	Ederesa pruniella (the white-back).
,,	13.	Ederesa tetrapodella (the blotched white-back).

FIG. PAGE

INSECTS. 14. Ederesa semipurpurella (the half-purple).
„ 15. Ederesa curvella (the brindled white-back ermine).
„ 16. Ederesa clematella (the barred white).
„ 17. Ederesa ossea (the cream-coloured).
„ 18. Ederesa ocellea (the eyed white-back).
„ 19. Argyrosetia Gœdartella (the Gœdartian).
„ 20. Argyrosetia semifasciella (the short gold-bar).
„ 21. Argyrosetia Bröckella (the gold IW).
„ 22. Argyrosetia literella (the Greek-lettered gold).
„ 23. Argyrosetia aurivitella (the golden riband).
„ 24. Argyrosetia aurifasciella (the gold-banded).
„ 25. Argyrosetia I-V-ella (the gold I-V).

PLATE CXII. 206

INSECTS. 1. Argyromiges Blancardella (the Blancardian).
„ 2. Argyromiges Schreberella (the Schreberian).
„ 3. Argyromiges cydoniella (the bright speckled gold).
„ 4. Argyromiges Klemannella (the Klemannian)
„ 5. Argyromiges mespilella (the silver-spotted gold).
„ 6. Argyromiges Raiella (the Rayian).
„ 7. Argyromiges tristrigella (the treble spotted gold).
„ 8. Argyromiges trifasciella (the tawny treble bar).
„ 9. Argyromiges Harrisella (the Harrisian).
„ 10. Argyromiges Cramerella (the Cramerian).
„ 11. Argyromiges hortella (the porcelain).
„ 12. Argyromiges sylvella (the dark porcelain).
„ 13. Argyromiges cuculipenella (the cuckoo's feather).
„ 14. Argyromiges Corylifoliella (the hazel red).
„ 15. Argyromiges Ulmifoliella (the elm red).
„ 16. Argyromiges Alnifoliella (the alder red).
„ 17. Argyromiges obscurella (the dull red).
„ 18. Argyromiges rufipunctella (the red and white barred).
„ 19. Argyromiges autumnella (the autumnal).
„ 20. Argyromiges nivella (the snowy).
„ 21. Argyromiges semiaurella (the pale gold dot).
„ 22. Argyromiges unipunctella (the simple dot).
„ 23. Argyromiges Spartifoliella (the golden dot).
„ 24. Argyromiges Clerckella (the Clerckian).
„ 25. Heribeia Haworthana (the Haworthian).
„ 26. Heribeia humerella (the shoulder stripe).
„ 27. Heribeia Forsterella (the Forsterian).
„ 28. Heribeia simpliciella (the simple shoulder stripe).
„ 29. Heribeia cognatella (the allied shoulder stripe).
„ 30. Microsetia sub-bistrigella (the double silver bar).
„ 31. Microsetia obsoletella (the obscure dot).
„ 32. Microsetia exiguella (the small dot).
„ 33. Microsetia cinereo-punctella (the grey dotted brown).
„ 34. Microsetia stipella (the triple gold spotted).
„ 35. Microsetia guttella (the white spotted sable).
„ 36. Microsetia quadrella (the silver spotted sable).

FIG. PAGE

INSECTS. 37. Microsetia sequella (the silver blotched).
„ 38. Microsetia pulchella (the small argent and sable).
„ 39. Microsetia bella (the beautiful argent and sable).
„ 40. Microsetia nigrella (the small double silver bar).
„ 41. Microsetia trimaculella (the cream spotted sable).
„ 42. Microsetia sub-bimaculella (the brown spotted sable).
„ 43. Microsetia nigrociliella (the black edged sable).
„ 44. Microsetia unifasciella (the silver barred brown).
„ 45. Microsetia mediofasciella (the central silver bar).
„ 46. Microsetia posticella (the pigmy silver bar).
„ 47. Microsetia aurella (the diamond barred pigmy).
„ 48. Microsetia floslactella (the creamy pigmy).
„ 49. Microsetia atricapitella (the black-headed pigmy).
„ 50. Microsetia ruficapitella (the red-headed pigmy).
„ 51. Microsetia violacella (the violet pigmy).
„ 52. Microsetia pygmæella (the least pigmy).
„ 53. Microsetia sericiella (the satin pigmy).
„ 54. Microsetia aurofasciella (the gold banded).
„ 55. Microsetia Gliechella (the Gliechian).
„ 56. Microsetia Pfeifferella (the four spotted gold).

PLATE CXIII. 214

INSECTS. 1. Glyphipteryx Linnæella (the Linnæan).
„ 2. Glyphipteryx Roesella (the Roeselian).
„ 3. Glyphipteryx Zinckella (the Zinckian).
„ 4. Glyphipteryx Schæfferella (the Schæfferian).
„ 5. Glyphipteryx bimaculella (the orange blotched black).
„ 6. Glyphipteryx eximia (the nonpareil).
„ 7. Glyphipteryx metallella (the metallic).
„ 8. Glyphipteryx subcuprella (the coppery).
„ 9. Glyphipteryx auroguttella (the gold dotted).
„ 10. Glyphipteryx variella (the variable).
„ 11. Glyphipteryx terminella (*Dale*).
„ 12. Pancalia Leuwenhoekella (the Leuwenhoekian).
„ 13. Pancalia Latreillella (the Latreillian).
„ 14. Pancalia Woodiella (the Woodian).
„ 15. Pancalia fusco-ænea (the brown brassy).
„ 16. Pancalia fusco-cuprea (the brown copper).
„ 17. Pancalia Merianella (the Merianian).
„ 18. Callisto guttea (the white spotted brown).
„ 19. Callisto Fyeslella (the Fuesslian).
„ 20. Callisto fusco-cuprella (the brown copper).
„ 21. Callisto fusco-viridella (the brown green).
„ 22. Harfagus cinctella (the silver-barred sable).
„ 23. Harfagus albistrigella (the white striped sable).
„ 24. Astyages grandipennis (the great raven feather).
„ 25. Astyages cylindrella (the buff-blotched slender).
„ 26. Astyages coracipennella (the small raven feather).
„ 27. Astyages serratella (the notched horn).
„ 28. Astyages obscurella (the brown feather).

FIG. PAGE

INSECTS. 29. Astyages Gryphipennella (the vulture feather).
" 30. Astyages lutarea (the shining clay).
" 31. Astyages ochroleucella (the pale shining clay).
" 32. Astyages nigricella (the black fringed clay).
" 33. Astyages flavicaput (the yellow-headed black).
" 34. Chrysocorys angustipennella (the narrow-winged).
" 35. Metallosetia spissicornis (the thick-horned green).
" 36. Metallosetia Trifolii (the trefoil).
" 37. Metallosetia brevicornis (the short-horned).
" 38. Porrectaria Anatipennella (the goose feather).
" 39. Porrectaria Otidipennella (the bustard feather).
" 40. Porrectaria Anseripennella (the duck feather).
" 41. Porrectaria Struthionipennella (the ostrich feather).
" 42. Porrectaria ornatipennella (the silver-streaked hook-tip).
" 43. Porrectaria ochrea (the silver-streaked).

PLATE CXIV. 222

INSECTS. 1. Porrectaria gallipennella (the cock's feather).
" 2. Porrectaria lineolea (the red-specked).
" 3. Porrectaria albicosta (the white-edged).
" 4. Porrectaria leucapennella (the lead-coloured).
" 5. Porrectaria argentula (the silvered).
" 6. Aphelosetia auritella (the eared).
" 7. Aphelosetia cygnipennella (the swan's feather).
" 8. Aphelosetia semialbella (the half white).
" 9. Aphelosetia triatomea (the treble-atomed white).
" 10. Aphelosetia floslactis (the cream-coloured).
" 11. Aphelosetia rufocinerea (the red brindled).
" 12. Aphelosetia olæella (the small shining brown).
" 13. Aphelosetia lucidella (the lucid).
" 14. Aphelosetia rufipennella (the red feather).
" 15. Aphelosetia fulvescens (the tawny).
" 16. Aphelosetia marginea (the bordered straw).
" 17. Batia lambdella (the tawny crescent).
" 18. Batia lunaris (the lesser tawny crescent).
" 19. Batia formosella.
" 20. Batia lutarella (the clay).
" 21. Batia saturatella (the dark clay).
" 22. Batia Panzerella (the Panzerian).
" 23. Batia flavifrontella (the yellow head).
" 24. Achroia alvearia (the honey).
" 25. Galleria cereana (the honeycomb).
" 26. The Caterpillar.
" 27. Ilythia sociella (the pale-shouldered).
" 28. Ilythia anella (the twin-spot).
" 29. Senta flammea (the flame).
" 30. Senta sericea (the silken).
" 31. The Caterpillar.
" 32. Eudorea Portlandica.
" 33. Eudorea cembrella (the large grey).
" 34. Eudorea subfusca (the drab grey).
" 35. Eudorea dubitalis (the hoary grey).
" 36. Eudorea pyralella (the yellow stigmaed grey).
" 37. Eudorea tristrigella (the three-streaked grey).
" 38. Eudorea pallida (the pale grey).
" 39. Eudorea lineola (the striped grey).
" 40. Eudorea murana (the wall-grey).
" 41. Eudorea resinea (the resin grey).

PLATE CXV. PAGE 228

FIG.

INSECTS. 1. Eudorea angustea (the narrow-winged grey).
" 2. Eudorea pusilla.
" 3. Eudorea Mercurella (the small grey).
" 4. Phycita nebulella (the ermine knot horn).
" 5. Phycita binævella (the double-blotched).
" 6. Phycita dilutella (the powdered knot-horn).
" 7. Phycita elutella (the cinereous knot horn).
" 8. Phycita rufa (the rufous knot horn).
" 9. Phycita angustella (the small ermine knot horn).
" 10. Phycita semirufa (the red-streaked knot horn).
" 11. Phycita bistriga (the double striped red knot horn).
" 12. Phycita tumidana (the warted knot horn).
" 13. Phycita fascia (the broad barred knot horn).
" 14. Phycita advenella (the marbled broad barred knot horn).
" 15. Phycita marmorea (the marbled knot horn).
" 16. Phycita porphyrea (the porphry knot horn).
" 17. Phycita consociella (the allied knot horn).
" 18. Phycita Rhenella (the dove-coloured knot horn).
" 19. Phycita pinguis (the tabby knot horn).
" 20. Phycita hostilis (the varied knot horn).
" 21. Phycita formosa (the beautiful knot horn).
" 22. Phycita stigmatella.
" 23. Phycita obtusa (the blunt-winged knot horn).
" 24. Phycita obscura (the obscure knot horn).
" 25. Phycita ornatella (the speckled knot horn).
" 26. Phycita Abietella (the pine knot horn).
" 27. Phycita Roborella (the dotted knot horn).
" 28. Phycita legatella (the plain knot horn).
" 29. Phycita fusca (the brown knot horn).
" 30. Phycita tristrigella (the three-streaked knot horn).
" 31. Phycita palumbella (the mealy knot horn).
" 32. Homœosoma gemina (the twin barred knot horn.)
" 33. Homœosoma cinerea.
" 34. Nemophila hybridalis (the rush veneer).
" 35. Oncocera Cardui (the thistle ermine).
" 36. Oncocera carnella (the rosy veneer).
" 37. Oncocera sanguinella (the buff-edged rosy veneer).
" 38. Araxes miniosella (the flame veneer).
" 39. Araxes lotella (the pale-edged flame veneer).
" 40. Araxes ocellea (the necklace veneer).
" 41. Araxes ahenella (the mouse-coloured veneer).
" 42. Prionapteryx nebulifera (the clouded veneer).

PLATE CXVI. 234

INSECTS. 1. Crambus lythargyrellus (the dark streaked satin veneer).
" 2. Crambus argyreus (the streaked satin veneer).
" 3. Crambus arbustorum (the yellow satin veneer).
" 4. Crambus argentellus (the white satin veneer).
" 5. Crambus dealbellus (the ivory veneer).
" 6. Crambus tentaculellus (the Portland veneer).
" 7. Crambus hamellus (the pearl streak veneer).
" 8. Crambus pascuellus (the inlaid veneer).
" 9. Crambus scoticus.
" 10. Crambus ericellus (the heath veneer).

	FIG.		PAGE
INSECTS.	11.	Crambus pratellus (the dark laid veneer).	
„	12.	Crambus angustellus (the narrow winged veneer).	
„	13.	Crambus hortuellus (the garden veneer).	
„	14.	Crambus cespitellus (the straw-coloured veneer).	
„	15.	Crambus montanellus (the dark mountain veneer).	
„	16.	Crambus marginellus (the bordered veneer).	
„	17.	Crambus latistrius (the broad-streaked veneer).	
„	18.	Crambus pinetellus (the pearl veneer).	
„	19.	Crambus chrysonuchellus (the powdered veneer).	
„	20.	Crambus rorellus (the chalk hill veneer).	
„	21.	Crambus falsellus (the chequered veneer).	
„	22.	Crambus lutæellus (the barred veneer).	
„	23.	Crambus tristis (the dingy veneer).	
„	24.	Crambus inquinatellus (the elbow striped veneer).	
„	25.	Crambus aridellus (the chalk veneer).	
„	26.	Crambus selasellus (the dark edged veneer).	
„	27.	Crambus obtusellus (the blunt winged veneer).	
„	28.	Crambus petrificellus (the common veneer).	
„	29.	Crambus aquilellus (the dusky yellow veneer).	
„	30.	Crambus palæellus (the large yellow veneer).	
„	31.	Crambus culmorum (the brown edged veneer).	
„	32.	Crambus fuscelinellus (the brown veneer).	
„	33.	Crambus nigristriellus (the black streaked veneer).	
„	34.	Crambus culmellus (the small straw-coloured).	
„	35.	Crambus cerusellus (the dark dwarf veneer).	
„	36.	Crambus pygmæus.	
„	37.	A dark variety (the pigmy veneer).	
„	38.	Crambus radiellus (the streaked mountain veneer).	
„	39.	Crambus margaritellus (the pearl-streaked veneer).	

PLATE CXVII. 240

INSECTS.	1.	Chilo forficellus (the aquatic veneer).	
„	2.	Chilo fumeus (the smoky veneer).	
„	3.	Chilo punctigerellus (the dark wainscot veneer).	
„	4.	Chilo phragmitellus (the wainscot veneer).	
„	5.	Chilo gigantellus (the gigantic veneer).	
„	6.	Theristis acinacidella (the narrow-winged veneer).	
„	7.	Theristis nemorella (the pale hook-tip veneer).	
„	8.	Harpipteryx dentella (the tooth-streaked hook-tip).	
„	9.	Harpipteryx falcella (the dark hook-tip).	
„	10.	Harpipteryx scabrella (the wainscot hook-tip).	
„	11.	Hypsolopha asperella (the chequered hook-tip).	
„	12.	Hypsolopha antennella (the netted hook-tip).	
„	13.	Hypsolopha persicella (the double-barred).	
„	14.	Chœtochilus costellus (the white shouldered).	
„	15.	Chœtochilus fissellus (the broad streak).	
„	16.	Chœtochilus radiatellus (the radiated).	
„	17.	Chœtochilus variellus (the variable autumn).	
„	18.	A variety.	
„	19.	Chœtochilus sylvellus (the wood autumn).	
„	20.	Chœtochilus rufimitrellus (the red headed autumn).	
„	21.	Chœtochilus maurellus (the dingy autumn).	
„	22.	Chœtochilus vittellus (the black back).	
INSECT.	23.	Chœtochilus sequellus (the small merveille du jour).	
PLANT.	24.	Silene quinquevulnera (variegated catchfly).	

PLATE CXVIII. 244

INSECTS.	1.	Cerostoma porrectella (the grey streak).	
„	2.	Cerostoma annulatella (the annulated).	
„	3.	Cerostoma maculipennis (the spotted wing).	
„	4.	Cerostoma xylostella (the honeysuckle).	
„	5.	Tinea tapetzella (the black-cloaked woollen).	
„	6.	Tinea semifulvella (the fulvous-tip).	
„	7.	Tinea ustella (the white-backed black).	
„	8.	Tinea flavicostella.	
„	9.	Tinea fuscipunctella (the brown-dotted woollen).	
„	10.	Tinea pellionella (the single-spotted woollen).	
„	11.	Tinea nigripunctella (the many-spotted yellow).	
„	12.	Tinea albipunctella (the white-speckled black).	
„	13.	Tinea flavescentella (the triple-spotted buff).	
„	14.	Tinea lapella (the triple-spotted yellow).	
„	15.	Tinea sulphurella (the sulphur).	
„	16.	Tinea destructor (the destructive).	
„	17.	Tinea cloacella (the dark-mottled woollen).	
„	18.	Tinea granella (the mottled woollen).	
„	19.	Tinea parasitella (the light-brindled woollen).	
„	20.	Tinea corticella (the bark).	
„	21.	Euplocamus mediellus (the agaric).	
PLANT.	22.	*Cucubalus baccifer* (berry-bearing campion).	

PLATE CXIX. 248

INSECTS.	1.	Lepidocera Birdella (Mr. Bird's).	
„	2.	Lepidocera mediopectinella (the middle feathered).	
„	3.	Lepidocera taurella (the little bull).	
„	4.	Lepidocera chenopodiella (the spotted bull).	
„	5.	Incurvaria masculella (the feathered diamond back).	
„	6.	Incurvaria pectinella (the feathered twin spot).	
„	7.	Incurvaria Oehlmanniella (Oehlmann's).	
„	8.	Incurvaria spuria (the spurious treble-spot).	
„	9.	Incurvaria tripunctella (the trebled-spotted).	
„	10.	Incurvaria rufimitrella.	
„	11.	Amaurosetia oppositella (the two-spotted brown).	
„	12.	Amaurosetia quadripunctella (the double-spotted brown).	
„	13.	Amaurosetia minutella (the double gold-spotted).	
„	14.	Amaurosetia cerusella (the triple-spotted white).	
„	15.	Amaurosetia Albinella (Albin's).	
„	16.	Amaurosetia Megerlella (Megerle's).	
„	17.	Amaurosetia albifrontella (the white fronted).	
PLANT.	18.	Fumaria officinalis (common fumitory).	

PLATE CXX. 250

INSECTS.	1.	Lampronia capitella (the triple-spotted black).	
„	2.	Lampronia prælatella (the spotted violet).	
„	3.	Lampronia flavipunctella (the four-spotted brown).	
„	4.	Lampronia formosella.	
„	5.	Lampronia margine-punctella (the dotted border).	
„	6.	Lampronia Melanella (the white spotted black).	

FIG. PAGE
INSECTS. 7. Lampronia atrella (the dingy black speckled).
„ 8. Lampronia corticella (the golden-speckled black).
„ 9. Lampronia rupella (the four-spotted black).
„ 10. Eriocephala subpurpurella (the purple underwing).
„ 11. Eriocephala semi-purpurella (the half-purplish underwing).
„ 12. Eriocephala purpurella (the purple upperwing).
„ 13. Eriocephala auropurpurella (the gold-brindled purple).
„ 14. Eriocephala rubroaurella (the red-gold).
„ 15. Eriocephala Hellwigella (the red-barred gold).
„ 16. Eriocephala sanguinella (the scarlet-barred gold).
„ 17. Eriocephala calthella (the small-gold).
„ 18. Eriocephala concinnella (the neat).
„ 19. Eriocephala Seppella (Sepp's).
„ 20. Eriocephala ammanella (the single-spotted gold).
„ 21. Eriocephala bistrigella (the silver-striped gold).
PLANT. 22. Corydalis lutea (the yellow fumitory).

PLATE CXXI. 254

INSECTS. 1. Euspilapteryx auroguttella (the gold dotted).
„ 2. Gracillaria nebulea (the nebulous slender).
„ 3. Gracillaria meleagripennella (the turkey's feather).
„ 4. Gracillaria syringella (the confluent barred).
„ 5. Gracillaria cinerea (the double-barred slender).
„ 6. Gracillaria V-flava (the yellow V).
„ 7. Gracillaria versicolor (the changeable).
„ 8. Gracillaria substriga (the obscure streaked).
„ 9. Gracillaria semifascia (the semi-white bar).
„ 10. Gracillaria purpurea (the triangle-marked purple).
PLANT. 11. Verbascum pulverulentum (the powdered mullein).

PLATE CXXII. 256

INSECTS. 1. Gracillaria stigmatella (the triangle-marked red).
„ 2. Gracillaria ochracea (the triangle-marked ochre).
„ 3. Gracillaria Thunbergella (Thunberg's).
„ 4. Gracillaria hemidactylella (the mottled red).
„ 5. Gracillaria rufipennella (the dull red).
„ 6. Gracillaria elongella (the plain red).
„ 7. Gracillaria violacea (the slender violaceous).
„ 8. Gracillaria roscipennella (the livid slender).
„ 9. Gracillaria leucapennella (the pale slender).
„ 10. Gracillaria sulphurella (the sulphur).
„ 11. Gracillaria præangusta (the poplar slender).
PLANT. 12. Geranium Robertianum (herb-Robert).

PLATE CXXIII. 258

INSECTS. 1. Agdistes Bennetii (the plumeless plume).
„ 2. Pterophorus pentadactylus (the large white plume).

FIG. PAGE
INSECTS. 3. Pterophorus spilodactylus (the wormwood plume).
„ 4. Pterophorus galactodactylus (the spotted white plume).
„ 5. Pterophorus bipunctidactylus (the grey-wood plume).
„ 6. Pterophorus fuscodactylus (the brown wood plume).
„ 7. Pterophorus pterodactylus (the common plume).
„ 8. The Caterpillar.
„ 9. The Chrysalis.
„ 10. Pterophorus monodactylus (the hoary plume).
„ 11. Pterophorus tephradactylus (the plain plume).
„ 12. Pterophorus tridactylus (the dotted-bordered plume).
„ 13. Pterophorus niveidactylus (the snowy plume).
„ 14. Pterophorus tetradactylus (the white-shafted plume).
„ 15. Pterophorus carphodactylus (the citron plume).
„ 16. Pterophorus ochrodactylus (the ochreous plume).
„ 17. Pterophorus leucodactylus (the lemon plume).
„ 18. Pterophorus lunadactylus (the crescent plume).
„ 19. The caterpillar of Porrectaria Anatipenella, figured in Plate 113, fig. 38.
PLANT. 20. Convolvulus Arvensis (common bindweed).

PLATE CXXIV. 260

INSECTS. 1. Pterophorus pallidactylus (the pale plume).
„ 2. Pterophorus migadactylus (the chalk-pit plume).
„ 3. Pterophorus similidactylus (the dusky plume).
„ 4. Pterophorus trigonodactylus (the triangle plume).
„ 5. Pterophorus rhododactylus (the rose plume).
„ 6. The Caterpillar.
„ 7. The Chrysalis.
„ 8. Pterophorus calodactylus (the beautiful plume).
„ 9. The Caterpillar.
„ 10. The Chrysalis.
„ 11. Pterophorus tesseradactylus (the marbled plume).
„ 12. Pterophorus punctidactylus (the brindled plume).
„ 13. Pterophorus cosmodactylus (the dark-brindled plume).
„ 14. Pterophorus didactylus (the spotted rusty plume).
„ 15. Pterophorus heterodactylus (the spotted black plume).
„ 16. Pterophorus microdactylus (the small plume).
„ 17. The Caterpillar.
„ 18. Pterophorus microdactylus (the Chrysalis).
„ 19. Alucita hexadactyla (the six-cleft plume).
„ 20. Alucita polydactyla (the many-cleft plume).
„ 21. Alucita pœcilodactyla (the dark six-cleft plume).
PLANTS. 22. Gentiana acaulis (dwarf gentian).
„ 23. Ononis procurrens (trailing rest-harrow).

BRITISH MOTHS

AND

THEIR TRANSFORMATIONS.

FAMILY X.

GEOMETRIDÆ.*

THIS family is of scarcely less extent than the Noctuidæ, from which, as well as from the Linnæan Bombyces, its species are distinguished by the general weakness of structure and slenderness of body, but more particularly by the remarkable peculiarities and geometric mode of progression of the caterpillars; whence has been derived the family name, derived from the Greek, and meaning "measurers of the ground." The head is of moderate size; the maxillæ short and weak, being nearly membranous; the labial palpi small and cylindrical; the antennæ variable, being strongly bipectinated in the males of some species, but simple in others; the wings are of large size and of various outline, being often extended horizontally, although in a few species they are carried vertically. We here find no traces of the curious characteristic markings of the Noctuidæ: the thorax is never crested; the legs are slender; the anterior tibiæ being armed internally with a spur, and the posterior with two pairs of those appendages.

The caterpillars are called loopers, or geometricians, and have generally three pairs of pectoral, and only one (the hindmost) pair of ventral prolegs, with a pair of anal feet; and hence, in walking, they first fix themselves firmly by means of their anal and ventral feet; they then extend the body to its greatest length, fixing themselves by their fore feet, and then drawing the hind part of the body as close after them as possible, so as to form an arch, like a pair of compasses, fixing their hind feet, and proceeding again as before. Their muscular power is very great, and hence their positions during repose are very striking. Fixing themselves by their anal feet alone, they extend their bodies in a straight line, directed upwards, and holding themselves at an angle in this position for a great length of time. This, together with their obscure colours and the warts which their bodies exhibit, renders it often quite difficult to distinguish them from the twigs of the trees on which they feed. Mr. Stephens describes the larvæ of some genera as possessing twelve, and others fourteen feet; and in a species figured by De Geer (Mém., tom. i. pl. 25, fig. 1—7), the larva has three pairs of ventral feet, the first and second of which are very minute. These caterpillars vary in their outward appearance, as will be seen by comparing our different plates. They feed on the leaves of various trees and plants, and have the instinct, when alarmed, of dropping from the leaves and suspending themselves by a thread, which enables them to remount when the danger is past. The chrysalides are of a conical form, with the head rounded. They are either naked or suspended by the tail, or enclosed in a very slender cocoon, which is rarely subterranean, and ofttimes placed amongst dry leaves, etc.

In the perfect state, these insects offer very little variation in their habits, flying sluggishly in the twilight or when disturbed during the day, and quickly settling again amongst the foliage of woods and hedges. In

* In the present reissue of this work, it has been considered advisable to retain the classification and nomenclature of the first edition, for the reasons given in vol. i. p. 104. The synoptical table given at the end of the present volume will, however, show the alterations which recent investigations have rendered necessary.—J. O. W., January, 1854.

their colours they are much more beautifully ornamented than the Noctuidæ, and many species have a broad wavy band across the fore wings, whence they have obtained the name of carpet-moths; they never exceed a moderate size. In a few species, the females are almost or entirely destitute of wings, and some of these, as Cheimatobia brumata, are exceedingly injurious to fruit-trees, devouring the tender shoots and leaves in the spring (see Kollar's work on Noxious Insects); whilst Bupalus piniarius is sometimes equally destructive in the pine-forests of Germany. (See Silbermann, Rev. Ent., No. 9.)

Of the relations of these insects but little can be said. The larger species with feathered male antennæ, as Latreille long ago remarked, exhibit so strong a relation to some of the Bombycidæ, that it would be rash, looking at the imagines alone, to assert that the relation was not one of affinity. The terminal Noctuidæ, as we have already shown, are, in several respects, very much allied to this family, whilst some of our fanciful entomologists have imagined a relation between the swallow-tailed butterfly and the swallow-tailed moth, because each of their hind wings happens to terminate in an elongated appendage.

Mr. Curtis proposes to divide these insects into two families, characterised by the structure of the male antennæ, but such a step would unnaturally break many strong relations, as pointed out by Mr. Stephens in his "Illustrations" (vol. iii. p. 143). Platypteryx constitutes an anomalous group, which, in the imago state, seems to be one of the types of form of this family; but its larva is altogether distinct, and more nearly resembles that of Cerura. But this relation is so slight, that Latreille has evidently confounded analogy with affinity, in uniting them into one tribe, which he named Aposura, the larvæ being destitute of anal feet.

The comparatively little which is known of the transformations of this family, and our ignorance of the exotic groups, arising from the neglect with which the smaller exotic Nocturnal Lepidoptera have been treated, render the classifications hitherto proposed of these, and indeed of all the subsequent families of moths very unsatisfactory. An elaborate examination of their characters, as exhibited in their different states, and extended over the exotic as well as native species, will alone determine the propriety of the establishment of many of the genera which have already been proposed, and which are adopted in the following pages.

DESCRIPTION OF PLATE LVII.

INSECTS.—Fig. 1. Psodos trepidaria (the black mountain-moth).
„ Fig. 2. Psodos alpinata (the gold four-spot).
„ Fig. 3. Speranza brunneata (the Rannoch Looper).
„ Fig. 4. Speranza Limbaria (the frosted yellow). 5. The Caterpillar.
„ Fig. 6. Bupalus piniarius (the bordered white). 7. The Female.
„ Fig. 8. Fidonia atomaria (the common heath). 9. Another variety. 10. A Female.
„ Fig. 11. Fidonia fuliginaria (the waved black). 12. The Caterpillar.
„ Fig. 13. Fidonia ericetaria (the bordered grey). 14. The Female.
„ Fig. 15. Mæsia Favillacearia (the grey scalloped bar).
„ Fig. 16. Hybernia leucophearia (the spring usher). 17. A variety.
„ Fig. 18. Anisopteryx Æscularia (the March moth). 19. The Female.
„ Fig. 20. Hybernia Capreolaria (the dotted border). 21. The Female. 22. The Caterpillar.
„ Fig. 23. Hybernia prosapiaria (the scarce umber). 24. The Female.

INSECTS.—Fig. 25. Hybernia defoliaria (the mottled umbre). 26. A variety. 27. A variety. 28. The Female 29. The Caterpillar.

PLANT.—Fig. 40. Cytisus scoparius (common broom).

The whole of the insects figured in this plate are from the cabinet of Mr. Bentley, who has, on this and numerous other occasions, most liberally allowed me to take all the insects I required to my own house, for the purpose of copying even unique specimens of great value. I have only given three varieties of Atomaria, but they are three of the most striking; for to give every intermediate gradation connecting the three distinctly-marked varieties figured, would have filled the plate. The females vary as much as the males. The same remark will apply to Defoliaria, with the exception of the female, which is apterous. The female of Capreolaria from a specimen sent me by Mr. H. Doubleday, is, he informs me, usually placed in cabinets as the female of Leucophearia; but he has had abundant opportunities this spring of proving that such is not the case. The female of Leucophearia, Mr. E. Doubleday informs me, is perfectly apterous.

The caterpillars are from Hübner and Freyer. H. N. H.

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PSODOS, Treitschke.

The wings are broad and rounded; the antennæ simple in both sexes; the spiral tongue long and slender; the palpi small, porrected, and densely clothed with long hairs, the terminal joint being very minute. Mr. Curtis considers this genus as forming the connecting link between this family and the Noctuidæ, by means of the genus Brepha; but Boisduval places it at the end of the Geometridæ, regarding it as forming the passage to the Pyralidæ by means of the genus Hercyna. The transformations are, unfortunately, unknown. The species are Alpine. Boisduval separates Equestrata, under the generic name of Torula, on account of the difference in the markings and habit of the wings.

Species 1.—Psodos trepidaria[a].—(Plate LVII., Fig. 1.)—Expanse, $\frac{5}{8}$ inch. Blackish-brown; fore wings rather narrow, sooty-black at base, with a very short, almost obsolete black line; a nearly central, oblique, dark fascia, with crenated edges; dilated towards the costa, enclosing a black dot; beyond this, in certain lights, is to be seen a broad, nearly obsolete striga, of a pale blackish hue, terminating in a black costal spot; hind wings nearly concolorous, blackish-brown, but with indications of spots and strigæ, as in the fore ones; apical margin of all the wings spotted with black. Very rare. Found at the end of June and beginning of July, on the summit of the mountains of Scotland.

a Synonyme.—*Geometra trepidaria*, Hübner; Haworth; Stephens; Curtis; Wood, Ind. Ent., fig. 449.

Species 2.—Psodos alpinata[b].—(Plate LVII., Fig. 2.)—Expanse, one inch. All the wings brown-black, with a large, irregularly oval patch of orange beyond the middle of each wing. Probably not truly British. Two specimens in Mr. Curtis's collection are stated by Haworth to have been taken at Holwood (Holywell), near Bromley, in Kent, by Mr. Plastead. It is found on the Alps in July.

b Synonymes.—*Geometra alpinata*, Wien. Verz.; Treitschke; Hübner; Stephens; Wood, fig. 450.

Geometra equestrata, Fabricius; Curtis, Brit. Ent., pl. 424; Haworth.

Geometra equestraria, Esper; Boisduval.

SPERANZA, Curtis.

The antennæ are bipectinated in the males; the pectinations rather short, and scarcely extending to the apex; the spiral tongue long and slender; the palpi porrected, thickly clothed with scales, not concealing the terminal joint, which is distinct, small, and oval. The body is slender; the wings somewhat triangular; the fore ones with a tubercle on the upper side, near the base. The caterpillars are slender, lineated, and smooth; resting, extended at full length along the branches; the perfect insects fly by day, and when at rest carry their wings erect.

Species 1.—Speranza brunneata[c].—(Plate LVII., Fig. 3.)—Expanse, 10 or 11 lines. Fore wings in the male dirty orange, with four very indistinct, dusky, sinuated, transverse strigæ, and a small dusky spot in the middle; hind wings paler, with two very obscure dusky strigæ, and a central spot. The female dull orange, with the strigæ broader and more distinct. Found, about the middle of July, "flying in the heat of the day over high heath, which covers the hillocks amongst the pine-trees in Blackwood, near the shores of Loch Rannoch." (Curtis, loc. cit.)

c Synonymes.—*Geometra brunneata*, Thunberg.; Stephens; Wood, fig. 451.

Speranza sylvaria, Curtis, Brit. Ent., pl. 225.

? *Eupisteria* (Bdv.) *quinquaria*, Hüb. (*pinetaria*, Hüb. ♀).

SPECIES 2.—SPERANZA LIMBARIA[d].—(Plate LVII., Figs. 4, 5.)—Expanse, $1\frac{1}{8}$ inch. Wings clay-coloured; fore wings with the fore margin thickly irrorated with brown specks, and a brown apical border; hind wings also thickly covered with brown scales, especially in the females. The caterpillar very slender, smooth, and green-brown, with yellow longitudinal stripes. It feeds on the broom, and the perfect insect flies by day, frequenting broom-fields in the beginning of May and end of July (Boisduval says in June). Mr. Haworth appears to have made some strange mistake in his description of this well-known insect.

[d] SYNONYMES.—*Phalæna limbaria*, Fabricius; Haworth; Stephens; Wood, fig. 452.
Geometra conspicuata, Wien. Verz.; Hübner; 117, 118.

BUPALUS, LEACH. FIDONIA. P. BOISDUVAL.

The fore wings are elongate triangular, varied with yellow and dusky markings; the body slender and the antennæ strongly bipectinated to the tips in the males; the palpi are very short and concealed by the hairs of the front of the head; the females are larger than the males, with simple antennæ; as in the foregoing genus, the males have a tubercle at the base of the wings, and they carry them erect when at rest; the caterpillars are also longitudinally streaked, and they repose at full length on the branches.

SPECIES 1.—BUPALUS PINIARIUS[e].—(Plate LVII, Figs. 6, 7.)—Expanse of the fore wings, $1\frac{1}{2}$-$1\frac{3}{4}$ inch. Fore wings in the male dark brown, with an elongate triangular pale buff patch in the discoidal area, and a larger irregular one occupying the greater part of the wings towards the anal angle; its edges irrorated with brown; hind wings brown, with a large buff thickly-irrorated patch, extending from the anal margin beyond the middle of the wing, and with its apical margin scalloped and preceded by a slender irregular fascia; female, with the ground-colour dirty reddish-brown, with the dark markings much less distinct. Caterpillar green, with five white and yellowish lines; it feeds on fir-trees; the perfect insect flying in fir plantations, especially in the north of England, in June.

[e] SYNONYME.—*Phalæna Geometra Piniaria*, Linnæus; Donovan, 10, pl. 336; Hübner; Haworth; Stephens; Wood, Ind. Ent., fig. 453, bis.

FIDONIA, TREITSCHKE.

The wings are rather short, broad, and rounded; thickly irrorated with dark atoms, forming more or less distinct strigæ; the antennæ strongly bipectinated in the males, the pectinations extending almost to the tip; the palpi very short and hairy, and the body slender. The females are winged, and of equal size with the males, having the antennæ very slender. The larvæ are described as having ten legs and smooth, that of F. fuliginaria, however, appears to be setose.

SPECIES 1.—FIDONIA ATOMARIA[f].—(Plate LVII., Figs. 8, 9, 10.)—This species measures from $1\frac{1}{12}$ to $1\frac{1}{4}$ inch in the expanse of the fore wings, which are extremely variable, both in their white or buff ground-colouring, and in the strength of the dark irrorations with which they are so strongly covered, and which unite in forming four very irregular bars across the wings; of these, the second and third converge together towards the hind margin; the third striga is interrupted in the middle, and the apical margin is often dark. A very common species, found on heaths in June. The caterpillar is at first green, but afterwards yellowish-brown, spotted with red or brown, and with a longitudinal streak. It feeds on various species of Scabiosa.

GEOMETRA CARBONARIA, Haworth, is possibly a small suffused variety, measuring only 11 lines in expanse of the fore wings, which are of a pitchy-brown colour, slightly irrorated with pale atoms.

[f] SYNONYMES.—*Phal. Geom. Atomaria*, Linnæus; Hübner; Donovan, 7, pl. 248. fig. 1, 2; Wood, fig. 454.
Phalæna aceraria, Hufnagle.
Phalæna pennata, Scopoli.
Phalæna Isoscelata, Scopoli, (female).
Geometra glarearia, Haworth; Hübner?
Geometra roseidaria, Hübner; Haworth.
(Variety?) *Geometra carbonaria*, Haworth (but not of Fabricius).

SPECIES 2.—FIDONIA FULIGINARIA[g].—(Plate LVII., Figs. 11, 12.)—This species measures 11 lines in the expanse of the fore wings, which are of a blackish colour, with three undulated subinterrupted whitish strigæ: the first being towards the base of the wing; the second beyond the middle, running also across the hind wing, and very much arched on the outside; the third is submarginal and rather indistinct, and beyond this a rather indistinct row of yellowish spots. Very rare; a few specimens, only taken at wide intervals in the neighbourhood of London, being all which have hitherto been noticed. The caterpillar is obscure, with fulvous and black dots, and a longitudinal streak on each side.

[g] SYNONYMES.—*Ph. Geom. fuliginaria*, Linnæus; Haworth; Stephens; Wood, Ind. Ent., pl. 18, fig. 456.
Ph. carbonaria, Fabricius; Hübner (but not of Haworth).
Ph. lunulata, Fabricius (female).

SPECIES 3.—FIDONIA ERICETARIA[h].—(Plate LVII., Figs. 13, 14.)—Varies from 1¼ to 1⅝ inch in the expanse of the fore wings, which are of an ashy colour, with a slight purplish tinge and much irrorated; the costa with three dusky dots, the central one produced within into a slender dusky striga, the third also extended into a much less distinct undulated striga, followed by a narrow pale streak; the apical margin itself being brown, which is found also in the hind wings; the female is smaller than the male, and more irrorated—a rare species, but found in fir plantations in Kent, Surrey, and Hampshire, in August, and occasionally in considerable numbers. Weybridge, June, 1842.—J. F. Stephens, Esq.

[h] SYNONYMES.—*Phal. Geom. ericetaria*, Villers; Haworth; Stephens; Wood, fig. 457.
Geometra plumistraria, Hübner.
Geometra subfimbriata, Haworth, in Ent. Trans., O. S. I. 336.

MÆSIA, STEPHENS. BUPALUS, CURTIS.

The palpi are not concealed in the hairs of the front of the head; they are squamose, with the terminal joint small and globose; the antennæ are less strongly bipectinated in the males than in the preceding genus; the wings are deflexed during repose, the hind ones covered by the fore ones, and irrorated with a dark central dot and strigæ of dusky markings; the female is smaller than the male.

SPECIES 1.—MÆSIA PAVILLACEARIA[i].—(Plate LVII., Fig. 15.)—This variable species measures about 1½ inch in the expanse of the fore wings, which in the males are of a pale ashy-white, the middle with a pale buff tinge, and finely powdered with dusky atoms; a dark spot at the extremity of the discoidal cell in all the wings, preceded in the fore wings by a slender dark scalloped striga, and followed by a much curved row of dusky arches (extending also across the hind wings), and which are more or less suffused towards the apical and anal angles; the margins of the wings with small dusky dots. The female is considerably smaller and darker coloured, being more thickly irrorated with dusky scales. Originally taken in Yorkshire, but more recently found in some plenty settling in the heathy places where the turf has been pared off in the New Forest, from the middle of May to the middle of July, and, unlike several of the preceding species, "nothing apparently will induce it to fly during the day."—Curtis.

[i] SYNONYMES.—*Geometra favillacearia*, Hübner; Haworth; Curtis, Brit. Ent., pl. 33; Stephens; Wood, fig. 458; Harris, Aurelian, pl. 33, fig. m.
Geometra mediopunctaria, Donovan, 13, pl. 461, fig. 1.
Geometra Belgiaria, Hübner.

ANISOPTERYX, Stephens, Boisduval. HYBERNIA, p. Curtis.

The fore wings in the males of this genus are long, entire, and of a very delicate structure; the antennæ of the males very slender and finely bipectinated; the palpi short; the spiral tongue scarcely distinct; the thorax weak and villose; the abdomen slender; the female with very hort rudiments of wings; the larva smooth, slightly elongated, and twelve-footed; it feeds on the leaves of trees.

Species 1.—Anisopteryx æscularia[k].—(Plate LVII., Figs. 18, 19.)—This species measures from 1⅓ to 1½ inch in the expanse of the fore wings of the males, which are of a pale glossy ashy-brown colour, with a central, broad, slightly dusky fascia, outwardly edged with a white dentated line, and an oblique brown line, which extends to the tip of the wing from the outer angle of the preceding striga; the hind wings with a dusky central dot and an indistinct fascia; the caterpillar is green, with pale longitudinal lines; it feeds on the horse-chestnut and other trees, and the imago appears in March.

[k] Synonyme.— *Geometra Æscularia*, Wien. Verz; Hübner; Haworth; Stephens; Wood, fig. 460, a and n.
Geometra murinaria, Esper.

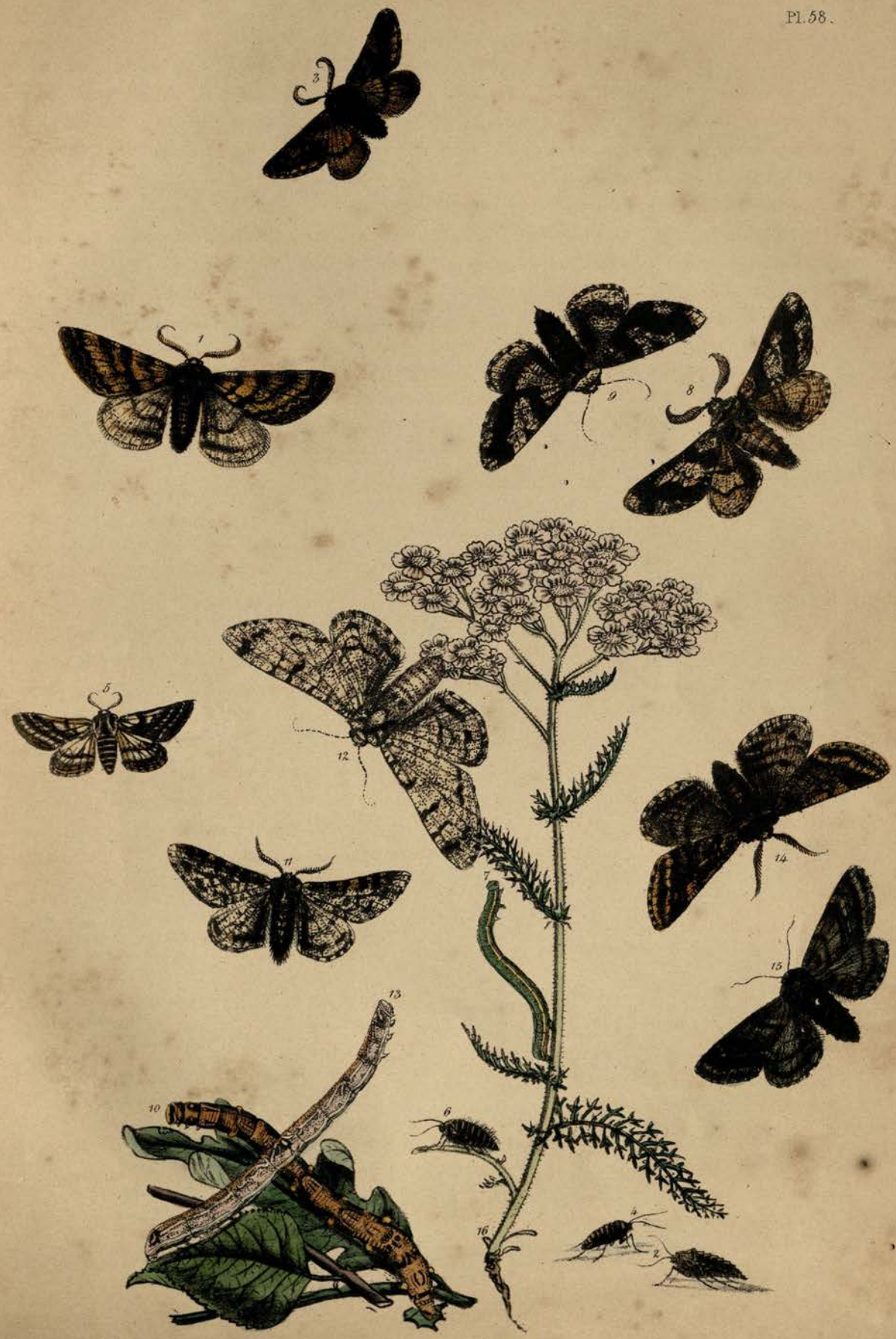
HYBERNIA, Latreille (LAMPETIA, Stephens, olim).

These insects have the sexes also very dissimilar, the females being entirely or nearly destitute of wings; the palpi very minute and the spiral tongue almost obsolete, being formed of two short lanceolate lobes, to which are attached a pair of minute three-jointed maxillary palpi; the antennæ are slender and bipectinated in the males; the wings in the males are large but weak. The caterpillars are smooth, slender, elongated, and ten-footed; they feed on the leaves of trees, and the perfect insects appear in the winter and spring.

Species 1.—Hybernia leucophearia[l].—(Plate LVII., Figs. 16, 17.)—The males of this species vary from 1⅓ to 1⅔ inch in the expanse of the fore wings, which are variable in their colour, being of a pale ashy tint, more or less saturated, and clouded with dark scales; an incurved slender fascia before, and another deeply waved beyond the middle, followed by a dark cloud-like fascia, considerably mottled. The hind wings mottled, and with dusky clouds near the anal angle. Our English entomologists appear to have regarded as the female of this species that of H. capreolaria (our figure 21) and vice versâ. The observations of Captain Chawner and Mr. H. Doubleday have, however, satisfactorily proved the incorrectness of this supposition; the true female of Leucophearia being entirely wingless. A common species, which flies in woods round London and other parts of the country, in February and March, preferring places where oaks abound, and flitting about with an undulating motion by day, between the hours of eleven and two p.m., and rarely ascending higher than the tops of the underwood.

[l] Synonymes.—*Geometra leucophearia*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 459 a (male), 461 n (female); Harris, Aurelian, pl. 43, figs. m, n, o, q.
Geometra nigricaria, Haworth; Hübner.
Geometra marmorinaria, Esper.

Species 2.—Hybernia capreolaria[m].—(Plate LVII., Figs. 20, 21, 22.)—This species measures from 1⅓ to rather more than 1⅔ inch in the expanse of the fore wings, which are of a brownish or reddish-buff colour, varying from light fawn to the darkest brown, thickly irrorated with dark atoms, and with a nearly straight, slender, dark striga before the middle of the wing, and another much bent towards the costa beyond the middle, beyond which is a broad darker bar, with a row of pale spots; the apical margin with a row of dark dots; hind wings with a central dark dot and evanescent fascia; the female with rudiments of wings, the anterior ones being obliquely truncate, of an ashy-brown colour, with three tranverse strigæ on the fore wings, and two on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the hind ones. The caterpillar is light fulvous; the anterior segments of the body with slender brown lines, edged with yellow, and the hind segments irregularly spotted. It feeds on oak, birch, etc., and the perfect insect, which is very common, appears at the commencement of the spring, flying about hedges.

GEOMETRA CONNECTARIA, Haworth; Wood, fig. 462, has been regarded as an autumnal variety of this species; it has the wings irrorated with dark brown atoms, and with three equidistant brown strigæ, the third being broad, and having a large pale patch towards the costa. It measures rather more than 1½ inch in expanse, and is found in October and November.

m SYNONYMES.—*Geometra capreolaria*, Esper; Stephens; Wood, fig. 461 a, and 459 n (female); Albin, pl. 44, fig. 72, a—d.
Geometra stictaria, Haworth; Curtis.
Geometra progemmaria, Hübner; Boisduval.

SPECIES 3.—HYBERNIA PROSAPIARIA[n].—(Plate LVII., Figs. 23, 24.)—This species measures rather more than 1½ inch in the expanse of the fore wings, which are of a light orange-buff, freckled with brown atoms, with an oblique striga before the middle, and another broad one rather beyond the middle, which extends across the hind wings; this latter striga is much bent between the costa and middle of the wing, and is followed by irregular, dark, and varied shades of brown. The hind wings with a central dark spot. The species is very variable, some specimens having an additional basal striga, and in others the strigæ being all nearly evanescent. The female is brown, spotted with dirty yellow, with minute rudiments of wings, and the caterpillar greenish, with a pale line on each side, and a yellow head. It feeds on birch, oak, etc., and the moth, which is a very widely-dispersed and rather common species, appears at the end of October, in woods.

n SYNONYMES.—*Phal. Geom. prosapiaria*, Linnæus; Haworth; Stephens; Wood, fig. 463 a and n.
Geometra aurantiaria, Hübner; Esper; Treitschke; Boisduval.
Phal. Geom. testacearia, Villers.

SPECIES 4.—HYBERNIA DEFOLIARIA[o].—(Plate LVII., Figs. 25, 26, 27, 28, 29.)—This very variable species measures from 1½ to 1¾ inch in the expanse of the fore wings, which are generally of a canary or orange-buff, much freckled with dusky atoms, with a broad, purplish-brown, incurved striga before the middle, a small central spot, and a very irregular curved fascia beyond the middle. The hind wings pale and freckled, with a small central dot; some specimens, as our figure 26, have the ground-colour of the wing dark orange-brown. The female is yellow, and spotted with black. The caterpillar has the fore part of the body and a series of large dorsal spots, red-brown, the remainder of the body being greenish-yellow, with a dark line above the spiracles, which are red-brown. It is finely hairy. It feeds on oak, beech, birch, etc.,* and the perfect insect, which is very common, appears from October to the middle of December. It is found on the trunks of trees in woods.

o SYNONYMES.—*Geometra defoliaria*, Linnæus; Hübner; Haworth; Stephens; Curtis, Brit. Ent., pl. 703; Wood, fig. 464 a and n; Harris, Aurelian, pl. 14, fig. n—r; Wilkes, pl. 72; Albin, pl. c, fig. e—h.
Phal. pulveraria, Hufnagle.
Phal. diversaria, Fabricius.

DESCRIPTION OF PLATE LVIII.

INSECTS.—Fig. 1. Phigalia pilosaria (the pale brindled beauty). 2. The Female.
„ Fig. 3. Nyssia hispidaria (the small brindled beauty). 4. The Female.
„ Fig 5. Nyssia zonaria (the belted beauty). 6. The Female. 7. The Caterpillar.
„ Fig. 8. Biston Prodromarius (the oak beauty). 9. The Female. 10. The Caterpillar.
„ Fig. 11. Biston Betularius (the peppered moth). 12. The Female. 13. The Caterpillar.
„ Fig. 14. Biston Hirtarius (the brindled beauty).

INSECT.—Fig. 15. The Female.

PLANT.—Fig. 16. Achillea millefolia (common millefoil or yarrow).

The whole of the insects in this plate are from the cabinet of Mr. Bentley, who, among a number of females of N. zonaria just arrived from Manchester, has received one which appears in its formation to partake equally of male and female; one side having a pectinated antenna and partially developed wings, while the other side has the antennæ simple, and is perfectly wingless; or at least as much so as ordinary females, in which the rudiments of the wings are almost imperceptible. H. N. H.

* Kollar, in his work on destructive insects (Miss Loudon's translation, p. 225), gives an account of the injury caused by this insect to apple-trees.

PHIGALIA, Duponchel. (HYBERNIA, pars Boisduval.)

This genus is closely allied to the preceding, but the body is very much more robust; the antennæ more strongly bipectinated; the wings are large, broad, triangular, and villose; the palpi very short, and concealed by the hairs of the face; the larvæ are ten-footed, cylindrical, and smooth, very slightly setose, and with a bifid tubercle on the eleventh segment of the body.

Species 1.—Phigalia pilosaria[p].—(Plate LVIII., Figs. 1, 2.)—Varies from 1½ to 1¾ inch in the expanse of the fore wings, which are of a greenish-mouse colour, with four dusky spots on the costa, equidistant; the first being near the base and the last near the tip of the wing; from each of these proceeds a more or less distinct curved, dusky striga, which is often almost evanescent; the hind wings are nearly similar in colour, but rather paler, with only one striga; the cilia with an interrupted striga at the base. The female is dusky-coloured, with a pale line down the back; it has very small rudiments of wings. The caterpillar is varied with yellow, brown, ferruginous, and black; the head, legs, and tail being rusty-red. It feeds on the oak, whitethorn, etc., in the summer, and the moth appears in March, and is a rather abundant and widely-dispersed species.

p Synonymes.—*Geometra pilosaria*, Wien. Verz.; Hübner; Albin, pl. 91, fig. e—i; Wilkes, pl. 87; Stephens; Wood, fig. 465 a and n. *Geometra plumaria*, Esper. *Phalæna pedaria*, Fabricius; Haworth. *Geometra hyemaria*, Borkhausen.

NYSSIA, Duponchel. (AMPHIDASIS, pars Treitschke.)

The wings in this group are much smaller than in Phigalia, to which it is, however, very closely related; the antennæ of the males are strongly bipectinated, the pectinations not extending quite to the tip; the palpi are very small, and densely pilose, being concealed by the hairs of the front of the head. The female has short rudiments of wings, or is entirely apterous, and the caterpillars are naked, cylindrical, and ten-footed.

Species 1.—Nyssia hispidaria[q].—(Plate LVIII., Figs. 3, 4.)—The male measures 1¾ inch in the expanse of the fore wings, which are ashy-grey, and powdered with dusky atoms, with an incurved striga near the base, another much curved beyond the middle, with a spot or indistinct striga between them, and a strongly dentated subapical one, the space beyond being paler; the cilia of all the wings spotted with large dusky dots, and the hind wings with an indistinct striga. The female is dark grey-brown. The caterpillar is brown, with dark spots; it feeds on the elm, and the perfect insect appears from the end of January to April. Mr. Matthews has also taken it in September. It is not a rare species, and is taken on the trunks of oaks and other trees.

Nyssia tauaria, Newman (Ent. Mag., 1, 413), has been regarded as a variety of this species.—"Brown-grey; mesothorax, with its anterior margin and a longitudinal central line, forming together the letter T, black: fore wings tawny-grey, transversely and irregularly waved with dark brown; exterior margin with a wide irregular band of pale brown; ciliæ of the same colour, having a row of black dots internally; hind wings pale brown, with a black spot at the anal angle." Expansion of the fore wings 1½ inch. Taken at Leominster, in June.

q Synonymes.—*Geometra hispidaria*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 466, a and n. *Phalæna ursularia*, Donovan, vol. xiii. pl. 447.

Species 2.—Nyssia zonaria[r].—(Plate LVIII., Figs. 5, 6, 7.)—This pretty species measures 1¾ inch in the expanse of the fore wings of the male, which are greyish-black, varied with white markings; a bar of the latter colour extending from the base to beyond the middle, intersected by the black veins and followed by two slender white strigæ, nearly parallel with the apical margin; hind wings white at the base; apical portion greyish-black, with a broadish white bar, succeeded by a narrow and occasionally obsolete one. The head and thorax are

longitudinally striped with black and white, and the abdomen has slender orange edges to the segments. The female is black, clothed with whitish hairs, and the abdominal segments are margined with orange; the wings appear in the shape of four small hairy scales. The caterpillar is green, the middle part of the segments being palest above, with a yellow longitudinal stripe on each side, and with a small and black ocellus on each side of the abdominal segments. The larvæ vary, however, as some, which were hatched from eggs sent me by Mr. Gregson, were darker than in Hübner's figure, copied in our plate. It feeds on Achillea millefolia, and other low herbaceous plants, and the perfect insect is found in the months of February, March, and April, and again in June and July, in various situations on the banks of the river Mersey, especially near Black Rock, where it has occasionally appeared in considerable numbers, and where it was first discovered in 1829. The chrysalides are buried at two or three inches' depth below the surface of the sand, as I am informed by Mr. Gregson, of Liverpool.

[r] Synonyme.—*Phalæna zonaria*, Wien. Verz.; Hübner; Treitschke; Duponchel; Curtis, Brit. Ent., pl. 615; Wood, fig. 1674, a—n.

BISTON, Leach. AMPHIDASIS, Boisduval.

These insects are the most robust of all the Geometridæ, having much the appearance of some of the Bombycidæ; the antennæ of the males are strongly bipectinated, the pectinations not extended quite to the tip, except in B. prodromarius; the palpi very short and hirsute; the spiral tongue almost obsolete; the head not very prominent; the wings strong; the abdomen thick and conical; and the female furnished with fully-developed wings. The caterpillars are long, cylindrical, slightly tubercled, with the head more or less bifid. They feed on the leaves of trees, and the pupa is buried beneath the surface of the ground.

Species 1.—Biston prodromarius[s].—(Plate LVIII., Figs. 8, 9, 10.)—This handsome insect varies from 1½ to rather more than 2 inches (the female exceeding the male in size) in the expanse of the fore wings, which have the ground thickly irrorated with black scales, and a black transverse striga, much waved, near the base of the fore wing, preceded by a reddish-brown bar; a second red-brown broad fascia crosses the wings obliquely beyond the middle, edged on each side with an irregular, dentate, black striga; a dusky fascia crossing the hind wings beyond the middle. The female is large, with the markings more strongly indicated. The antennæ of the males are pectinated to the tip, and of a reddish-grey colour; the central bar alternately black and white. The caterpillar is ashy or brown coloured, with darker markings, and with white dots and tubercles, varying in size. It feeds on the oak, birch, etc., in the summer, and the moth appears in the following March and April, frequenting oak woods, and occurring in various places, but by no means abundantly.

[s] Synonymes.—*Phalæna prodromaria*, Wien. Verz.; Fabricius; Harris, Exp., pl. xiii. f. 4; Donovan, 7, pl. 219; Haworth; Stephens; Wood, fig. 467. | *Geometra marmoraria*, Esper. *Phalæna strataria*, Hufnagle.

Species 2.—Biston betularius[t].—(Plate LVIII., Figs, 11, 12, 13.)—This species measures from 1½ to 2¼ inches in the expanse of the fore wings, which, as well as the body and hind wings, are of a white colour, thickly sprinkled with black dots, forming clouds, and sometimes also two angulated streaks, one before and the other behind the middle, and irregular blotches running from the costa; there is also a submarginal series of dark patches, which also extend along the margin of the hind wings, the latter having a central lunule and a slender flexuous streak; the extent of these irrorations is very variable, causing the wings to have a paler or darker appearance; the antennæ of the males are not pectinated quite to the tips. The female is larger than the male. The caterpillar is cylindrical, greenish, hazel, ochraceous brown, or very deep brown, with paler stripes,

and the eighth and eleventh segments often bearing a pair of tubercles tipped with black or brown. It feeds on the elm, oak, etc., at the beginning of September, and the moth appears in June, frequenting woods in various parts of the kingdom.

[t] Synonymes.—*Phalæna Geom. betularia*, Linnæus; Albin, pl. 40, fig. 64, a—d, pl. 41, fig. 66, and pl. 91, fig. a—d, pl. 92, fig. a—d; Wilkes, pl. 77; Harris, Aurelian, pl. 18, fig. a—f; Haworth; Donovan, 7, pl. 237; Stephens; Wood, fig. 468.
Geometra Ulmaria, Borkhausen.

Species 3.—Biston hirtarius[u].—(Plate LIX., Figs. 14, 15.)—This species measures from 1½ to nearly 2 inches in the expanse of the fore wings, which are of a dark luteous grey, or brown colour, thickly irrorated with fine dusky atoms, and three or four dark strigæ, which are more or less conspicuous, and generally equidistant, but sometimes more or less confluent on the hind margin; of these, one beyond the middle is the broadest and most curved; the hind wings are similarly coloured, having generally three nearly obsolete, dusky, equidistant, slender strigæ. The female differs, in having the wings less thickly clothed with scales, which renders them more transparent, and the fasciæ less distinct; the antennæ in the males are not quite feathered to the tips. The caterpillars vary considerably in colour, being generally of a greenish-brown, with greyish markings and pale stripes, and with numerous small tubercles; they feed on various fruit-trees, as well as on privet, lime, and elm, and undergo the change to the chrysalis state about the beginning of July; and the moths appear in the following April. It is a very common species.

[u] Synonymes.—*Phalæna Geometra hirtaria*, Linnæus; Hübner; Haworth; Albin, pl. 39, fig. 62, a—d; Wilkes, pl. 70; Harris, Aurelian, pl. 9, fig, a—f; Stephens; Wood, fig. 469.
Geometra congeneraria, Hübner; Haworth (variety).
Geometra contiguaria, Borkhausen.
Geometra fumaria, Haworth (variety).

DESCRIPTION OF PLATE LIX.

Insects.—Fig. 1. Himera pennaria (the October moth). 2. The Caterpillar.
„ Fig. 3. Crocallis elinguaria (the scalloped oak). 4. The Caterpillar.
„ Fig. 5. Odontopera bidentata (the scalloped hazel). 6. The Caterpillar.
„ Fig. 7. Geometra Tiliaria (the canary-shouldered thorn). 8. The Caterpillar.
„ Fig. 9. Geometra erosaria (the September thorn). 10. The Caterpillar.
„ Fig. 11. Geometra angularia (the clouded August thorn). 12. The Caterpillar.
„ Fig. 13. Geometra illunaria (the early thorn). 14. The Caterpillar.
„ Fig. 15. Geometra lunaria (the lunar thorn). 16. The Caterpillar.
„ Fig. 17. Geometra delunaria.
„ Fig. 18. Geometra illustraria (the purple thorn).
„ Fig. 19. Geometra sublunaria, a variety of illustraria.
„ Fig. 20. Geometra fuscantaria.
„ Fig. 21. Pericallia Syringaria (the lilac beauty). Caterpillar and Chrysalis without number in Plate 60.
„ Fig. 22. Angerona prunaria (the orange moth). 23. The female. 24. A variety of the female. 25. The Caterpillar.
Insects.—Fig. 26. Rumia cratægata (the brimstone moth). 27. The Caterpillar. 28. A variety of the Caterpillar.
„ Fig. 29. Ourapteryn sambucaria (the swallow-tailed moth). 30. The Caterpillar. 31. The Cocoon, misnumbered as 13.
„ Fig. 32. Campæa margaritaria (the light emerald).
„ Fig. 33. Ellopia fasciaria (the barred red).

The whole of the insects figured in this plate, with the exception of Cratægata, Prunaria, and Sambucaria, from Mr. H. Doubleday, are from the cabinet of Mr. Bentley.

Geometra angularia is from a female specimen, as that sex exhibits more strongly the angulated irregularity of the edge of the wings. Its varieties, Quercinaria, Quercaria, etc., etc., I have not thought sufficiently characteristic to require a figure. Nor have I thought it necessary to figure the small variety of Illunaria, called Juliaria. I selected the bordered variety of A. Prunaria as that most commonly taken; but Mr. E. Doubleday assures me that it is unusual in some places, and on the Continent (in some parts) extremely rare. The female variety without any markings, is from a specimen taken by myself at Birch Wood.

All the Caterpillars are from Hübner. H. N. H.

HIMERA, Duponchel. METRA, Stephens's Cat.

The antennæ of the males are very strongly bipectinated; the palpi villose, and shorter than the clypeus, the thorax moderately robust, and very densely clothed with long hairs; the wings are slightly notched, and marked with a central broad bar, enclosing a discoidal spot; the female is winged, but generally smaller than

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the male. The caterpillar is thick and smooth, with ten feet, the thoracic segments scutellated, and the penultimate one bimucronate.

SPECIES 1.—HIMERA PENNARIA[a].—(Plate LIX., Figs. 1, 2.)—Varies from 1½ to 2¼ inches in the expanse of the fore wings, which are of a reddish-buff colour, slightly freckled with dusky atoms, and marked with two oblique bars of purplish-brown (sometimes confluent behind, which is the G. bifidaria of Haworth), between which is a small spot of the same colour, and a white dot near the apex of the wing: the hind wings paler at the base, with a single striga behind the middle, which is almost obsolete in the females. It is a variable species in the depth of the ground-colour of the wings, and the intensity of the irrorations. The caterpillar is greyish-brown, varied with irregular white markings, especially down the middle of the back and sides; the penultimate segments with two short spines, and the thoracic ones with red dorsal patches. It feeds on oak and other forest trees, and the moth appears at the end of the autumn, and is a common and widely-dispersed species.

[a] SYNONYMES.—*Phalæna Geometra pennaria*, Linnæus; Donovan, 8, pl. 287, fig. 2; Haworth, Wilkes, pl. 79; Harris, Aurelian, pl. 43, fig. g—i; Stephens; Wood, fig. 470. *Geometra bifidaria*, Haworth (variety).

CROCALLIS, TREITSCHKE.

This genus has the male antennæ much less strongly pectinated than in the last, and the palpi longer, with the terminal joint slender; the spiral tongue obsolete. The thorax is robust and woolly; the fore wings are subdentated on the apical margin, and are marked by a broad bar enclosing a dark discoidal spot. The larvæ are ten-footed, cylindric, rugose, and very slightly hairy, and the head large.

SPECIES 1.—CROCALLIS ELINGUARIA[b].—(Plate LIX., Figs. 3, 4.)—Varies from 1½ to 1⅔ inch in the expansion of the fore wings, which are of a bright pale buff colour; the fore ones with a very broad, darker, central bar, edged with slender brown lines, and enclosing a black discoidal spot; the margins of all the wings with a row of small dark dots; hind wings with a dark central spot, and a very slight subcentral striga, which are, however, occasionally more or less obsolete. The caterpillar is light brown, much variegated with small darker markings: it feeds on various fruit-trees, oak, elm, etc., and the moth, which is a common and widely-dispersed species, appears in August. The eggs in this species are oblong, and depressed, not unlike a thick 8vo volume.

[b] SYNONYME.—*Phal. Geom. elinguaria*, Linnæus; Haworth; Albin, pl. 39, fig. 63, e—h, pl. 42, f. 67, e—h; Wood, fig. 471.

ODONTOPERA, STEPHENS. ENNOMOS.

Mr. Stephens separates the type of this genus from the preceding and following genera, with which latter it is associated by the continental Lepidopterists, in consequence of its possessing an elongated spiral tongue, and strongly bidenticulated fore wings, which are deflexed when at rest. The antennæ are less strongly bipectinated, and the hind wings entire. The caterpillar, however, has much more the habit of that of Crocallis than of Geometra.

SPECIES 1.—ODONTOPERA BIDENTATA[c].—(Plate LIX., Figs. 5, 6.)—This species measures rather more than 2 inches in the expanse of the fore wings, which are of a dirty buff colour, or reddish-brown, and thickly irrorated with dark scales, with two undulated strigæ; the basal one almost obsolete, and between them a dark brown ring; the hind wings also with a discoidal brown annulus, behind which is a slender obscure fascia. The caterpillar is very variable in colour, being chiefly green or greyish-brown, thickly varied with dark markings, those on the back being arranged somewhat diamond-wise, whilst others are black, ferruginous-brown, or even cream coloured with delicate chequered markings. It feeds by night on willow, alder, jasmine, and other trees, in September, and the moth appears in April and June, being double-brooded. It is not a rare species.

[c] SYNONYMES.—*Phalæna Geom. bidentata*, Linn.; Albin, pl. 96, fig. a—c; Harris, Aurelian, pl. 10, fig. s—x; Stephens; Wood, fig. 472. *Geometra bidentaria*, Fabricius; Haworth. *Geometra dentaria*, Hübner; Esper; Boisduval.

GEOMETRA, Leach, Stephens ENNOMOS, Duponchel, Boisduval

I have followed Leach and Stephens in giving to the Thorn Moths the name applied by Linnæus to the entire group of Looper Moths, in preference to that of Ennomos, the type of which, as first proposed by Treitschke, was the Phalæna flexula; for which Mr. Stephens has retained the name of Ennomos. These Thorn Moths, however, can scarcely be conceived to have been regarded by Linnæus as typical of the group; for neither do they occur at the head of his section, nor will their larvæ agree with his observation, "Harum pectinicornium larvæ imprimis referunt ita ramulum ultimum, cui, insident, ut difficile ab eo distinguantur." (Linn. Syst. Nat., Ed. 12, 2, p. 858, note.) The French Lepidopterists, indeed, give the name of Geometra to G. papilionaria, which species was placed by Linnæus in the middle of his second section of the group. The species of the present genus are distinguished by their elongated palpi; male antennæ bipectinated to the tips; strongly denticulated wings, which are elevated in repose, somewhat like those of butterflies; the larvæ are variable, but often singularly nodose; and their third pair of feet are larger than the preceding pairs. The synonymy of the species is very much involved.

SECTION 1.—Autumnal Species. Hind wings distinctly angulated; pectinations of antennæ elongated.

Species 1.—Geometra Tiliaria[d].—(Plate LIX., Figs. 7, 8.)—This species varies from 1⅓ to 1½ inch in the expanse of the fore wings, which are of a fulvous colour, irrorated with brown, and with two subincurved brown strigæ, and a slight line at the extremity of the discoidal cell; the hind wings less strongly atomose, with a somewhat obsolete striga in the middle; the thorax is robust and sulphur-coloured. The caterpillar is furnished on the back with several pairs of acute tubercles; it is of a brown colour, varied with dark brown and grey markings, and pale buff irregular streaks. It feeds on the lime, alder, and other trees, and the moth appears in August, and is very common.

Geometra canaria, Hübner; Stephens; Wood, fig. 474, is a probable variety, with paler wings, destitute of dusky irrorations.

[d] Synonymes.—*Geometra Tiliaria*, Stephens; Wood, fig. 473 (not Tilaria, Haworth, which is probably a variety of Angularia).
Geometra alniaria, Haworth, but not of Linnæus nor of Donovan.

Species 2.—Geometra erosaria[e].—(Plate LIX., Figs. 9, 10.)—This species varies from 16 to 19 lines in expanse; it has the wings angulated, truncated, and of a luteous colour; the fore ones with two oblique, straight or nearly straight strigæ; the hind wings angulato-dentated, immaculate, or occasionally with a central, occasionally geminated, but very obsolete striga; the thorax robust, fulvous in front and luteous behind.

Geometra ochraria, Stephens; Wood, fig. 475, is rather smaller, with the angles of the hind wings less produced; the wings are pale ochre, with two obsolete, fulvescent strigæ; the caterpillar is brown, varied with fulvous patches and dark markings, and with obtuse tubercles on some of the terminal segments. The perfect insect is found in August and September, and is not uncommon.

[e] Synonyme.—*Geometra erosaria*, Wien. Verz.; Hübner; Treitschke; Haworth; Stephens; Wood, fig. 476, but not of Esper.

Species 3.—Geometra quercinaria[f].—This species varies from 1⅓ to 1⅔ inch in the expanse of its fore wings, which are greyish-buff, very much freckled and brown atoms, or fulvous and but slightly atomose, and with two brown strigæ; from the last species it differs in having the fore wings less distinctly truncate at the apex; the thorax is greyish-buff or fulvous. The perfect insect is found in August in the neighbourhood of lime-trees, and is not uncommon.

[f] Synonymes.—*Geometra quercinaria*, Hübner; Haworth; Borkhausen; Treitschke; Boisduval; Stephens; Wood, fig. 477 bis.
Ennomos erosaria, variety, Curtis.
Geometra alniaria, Hübner (female); Donovan, 8, pl. 275; fig. 1
Geometra Tiliaria, Haworth.

SPECIES 4.—GEOMETRA ANGULARIA[g].—(Plate LIX., Figs. 11, 12.)—This species measures from 1⅓ to 1⅔ inch in the expanse of the fore wings, which are fulvous; the middle of the wing in the males with a broad paler bar, curved towards the costa, and edged with a dark line on each side, the second of which is followed by a dark brown fascia gradually shaded off; the hind wings with a slender striga before the middle; the female has the wings more uniformly coloured, and much freckled with brown and with the strigæ of the male. This is a variable species, but Lepidopterists are divided in their opinion as to whether the two following insects are distinct species, or merely varieties; Duponchel, followed by Curtis, giving them as varieties, and Stephens as distinct.

GEOMETRA QUERCARIA, Hübner, Stephens, Boisduval, Wood, fig. 478 bis, which differs from the type in not having the base and fascia beyond the second striga dark brown. Mr. Stephens describes the sexes as perfectly resembling each other; but Wood's two figures are quite unlike each other, both in form and colour, the female differing, as is the case in other allied species, in having the teeth of the wings more developed. Found near London, but rare.

GEOMETRA CARPINIARIA, Hübner, Stephens, Wood, fig. 480 (G. angularia, var., Boisduval), has the wings pale fulvous, with two slight transverse strigæ, the second of which extends across the hind wings, and is followed by a dark shade; the hind wings are brownish. Near London, but rare.

The caterpillar is red-brown, with a luteous-coloured head and greyish beneath, with black spots and tubercles tipped with white; it feeds on lime, oak, and other trees, and the moth appears in August and September, and is very common.

[g] SYNONYME.—*Geometra angularia*, Wien. Verz.; Hübner; Esper; Treitschke; Duponchel; Boisduval; Curtis, Brit. Ent., pl. 667; Stephens; Wood, fig. 478 bis.

SPECIES 5.—GEOMETRA FUSCANTARIA[h]—(Plate LIX., Fig. 20)—measures 1⅓ inch in the expanse of the fore wings, which are straightly truncate at the tips, and of a fulvous ashy tint, with two strigæ, beyond which the wing is dusky; the hind wings in the males are brown from the base to the middle, and fulvous at the extremity; those of the females are entirely brown. This is an uncommon species. Near London, Cambridgeshire, and Stourton Caundle.

[h] SYNONYMES.—*Geometra fuscantaria*, Haworth, Prod.; Stephens; Curtis; Wood, fig. 485.
Geometra carpiniaria, Haworth, Lep. Brit.

SECTION II.—VERNAL AND ÆSTIVAL SPECIES. WINGS MUCH DENTATED; PECTINATIONS OF ANTENNÆ SHORT.

SPECIES 6.—GEOMETRA ILLUNARIA[i].—(Plate LIX., Figs. 13, 14.)—This species measures between 1⅓ and 1⅔ inch in the expanse of the fore wings, which are very much irrorated, and of a reddish-ashy colour, with three nearly equidistant, reddish-brown strigæ towards the middle of the fore wings, the first incurved before the middle of the wing, the second broad, central, and extending across the hind wings, on which, towards the costa, there is a whitish lunule, almost obsolete; the third striga is more oblique, and placed beyond the middle of the wing; the apex itself red-brown; the hind wings, with a lunule in the striga, almost obliterated. The female resembles the male, but is rather darker coloured. Very variable. The caterpillar is grey at the sides of the body, with the back and sides of the terminal segments reddish-brown, and marked irregularly with black, the eighth and ninth segments armed with acute dorsal tubercles; in young specimens the brown is much more brilliant. It feeds on oak, willow, etc., and the moth appears in March and April.

GEOMETRA JULIARIA, Haworth, Stephens, Curtis, Wood, fig. 482, is now proved to be the summer brood of the preceding species. (See E. Doubleday, in Ent. Mag., t. 3, p. 287.) It is, however, generally considerably smaller than the spring brood.

[i] SYNONYMES.—*Geometra illunaeia*, Wien. Verz.; Hübner; Treitschke; Duponchel; Boisduval; Stephens; Wood, fig. 481.
Geometra bilunaria, Esper.
Geometra unilunaria, Esper.
Phalæna Geom. ustularia, Donovan, 3, pl. 82? Wilkes, fig. 81.

SPECIES 7.—GEOMETRA LUNARIA[k].—(Plate LIX., Figs. 15, 16.)—This species varies from $1\frac{5}{12}$ to $1\frac{2}{3}$ inch in the expanse of the fore wings, which are of an ashy-red colour, but slightly atomose, with two rather slightly-marked strigæ (between which is a white lunule), the first incurved before the middle of the wing, the second straight a little beyond the middle, but slightly beyond the white lunule; the apex with a semi-lunule of red-brown; the hind wings with a white lunule, edged with brown, beyond which is a slender brown striga. The female is paler and more atomose. The caterpillar is brown, varied with dark markings and patches of reddish-brown, and with conical tubercles on the back. It feeds on the whitethorn, and the moth appears in June, and is widely dispersed, but rather rare.

[k] SYNONYMES.—*Geometra lunaria*, Wien. Verz.; Fabricius; Hübner; Donovan, 4, pl. 132; Haworth; Albin, pl. 15, fig. a—d; Wilkes, pl. 63; Stephens; Wood, fig. 483.

SPECIES 8.—GEOMETRA DELUNARIA[l]—(Plate LIX., Fig. 17)—measures $1\frac{1}{2}$ inch in the expansion of the fore wings, which are greyish-white, scarcely atomose, and with an oblique striga towards the middle of the wing, of a brown colour, and extending across the hind wings; the fore wings moreover, with another incurved striga in the middle, and the hind wings with two adjoining, to the outer of which is a diaphanous but rather obsolete lunule. The hind wings are less denticulated than in the last species, although Mr. Stephens suspects it may prove to be but a variety of it. Boisduval, however, affirms its distinction. "Taken at Birch Wood, in July," according to Mr. Stephens.

[l] SYNONYME.—*Geom. delunaria*, Hübner; Stephens; Boisduval; Wood, fig. 484.

SPECIES 9.—GEOMETRA ILLUSTRARIA[m].—(Plate LIX., fig. 18.)—This species measures from $1\frac{2}{3}$ to 2 inches in expanse, all the wings being varied with dark brown and ashy from the base to the middle, with a white lunule, an incurved dark striga near the base, the apical portion purplish-buff, with a bright red apical lunar mark, and a brown apical cloud behind; hind wings similar, but rounded, and with a brown dot, towards the apical margin, the middle of the wing marked also with a white lunule. The caterpillar is reddish or brown, with white and dark brown spots and stripes. It feeds on oak and other trees, and the moth appears in May and June, but is a rare species; found in the woods of Kent, the New Forest, Devonshire, etc.

[m] SYNONYMES.—*Geometra illustraria*, Hübner; Treitschke; Duponchel; Stephens, Ill. H. 3, pl. 28, fig 2; Wood, fig. 487; Albin, pl. 42, fig. 69, e—h. | *Geometra quadrilunaria*, Esper. *Phalæna trilunaria*, Hufnagle.

SPECIES 10.—GEOMETRA SUBLUNARIA[n].—This species is closely allied to the last, but is smaller (measuring from $1\frac{1}{2}$ to $1\frac{2}{3}$ inch in expanse, with the fascia beyond the central lunule slightly flexuous, and extending nearly to the anal angle; the hind wings reddish, with a brown fascia extending from the anal margin, and enclosing the central whitish lunule: these wings are very much more strongly scalloped along the margin than in the last species. Rare. Derbyshire.

[n] SYNONYME.—*Geometra sublunaria*, Stephens; Ill. H. 3, pl. 28, fig. 1; Wood, fig. 486.

PERICALLIA, STEPHENS. ENNOMOS, P. TREITSCHKE.

The type of this genus is closely allied to the last, but the antennæ are bipectinated in both sexes, although less strongly in the females than in the males; the fore wings are not elevated in repose, and are not strongly lobed as in Geometra; the palpi are rather short, the larva ten-footed, slender in front, with the fourth segment tuberculated, and two long recurved hooks on the eighth segment; the chrysalis is short and thick, and supported by a light web amongst leaves.

SPECIES 1.—PERICALLIA SYRINGARIA[o].—(Plate LIX., Fig. 21, and Plate LX., Fig. supr. fig. 29)—This elegant insect measures about 1½ inch in the expanse of the fore wings, which are of a yellowish-grey, varied with large paler patches on the costa, and an angulated violaceous striga towards the base, and two others, which extend across the hind wings, suddenly angulated next the costa, where they are more approximate than behind; the first of these is brown, and the outer one pale violaceous, varied with brown beneath its subcostal angle, there is also a violaceous patch near the tip; hind wings more griseous, with some black spots on the anal margin. The caterpillar is pale brown, with darker shades. It feeds on lilac, privet, jasmine, etc., and the moth frequents gardens and woods, and is widely dispersed, although nowhere common.

[o] SYNONYME.—*Geometra Syringaria*, Linnæus; Haworth; Donovan, pl. 181; Wilkes, pl. 82; Stephens; Wood, fig. 488.

ANGERONA, DUPONCHEL. ENNOMOS, P. BOISDUVAL.

Distinguished from the preceding by its weak body and very large wings, the anterior of which have the margins entire and rounded, and the posterior slightly notched, the antennæ slender and short, those of the females being simple, and the palpi very short. The caterpillars are elongated, with two short conical tubercles on the fifth and ninth segments, and the chrysalis is enclosed in a web amongst the leaves.

SPECIES 1.—ANGERONA PRUNARIA[p].—(Plate LIX., Figs. 22—25.)—This common, variable, and conspicuous species measures rather more or less than 2 inches in the expanse of the fore wings, which are of a fulvous or orange colour, being brightest in the males, freckled with brown, and with a brown lunule in the middle of each wing; the base and extremity often also saturated with brown, varying greatly in its extent. The caterpillar is also variable, being ferruginous, brown or buff, varied with paler markings, and the head and tubercle reddish. It feeds on various trees, and the moth appears at the end of June, frequenting woods. A singular hermaphrodite specimen of this species is figured in the Transactions of the Entomological Society of France.

[p] SYNONYMES.—*Phal. Geom. prunaria*, Linnæus, Hübner; Donovan, 1, pl. 27 and 9, pl. 293, fig. 3; Haworth; Curtis; (Hipparchus, p.); Albin, pl. 43, fig. 70, a—c; Id. pl. 100, fig. a—d; Wilkes, pl. 84; Stephens; Wood, fig. 489 bis.

Geometra corylaria, Esper (variety).
Geometra dimidiata, Fabricius (variety).
Phalæna sordiata, Schrank.

RUMIA, DUPONCHEL. ENNOMOS, P. TREITSCHKE.

This species has the antennæ of the males simply ciliated; the palpi short, scarcely extending beyond the front of the head; the body slender; the wings with the margins entire, except in the middle of the hind ones, which are slightly angulated. The caterpillars have three pairs of abdominal prolegs, of which the two anterior pairs are short and apparently useless (see fig. 27); the seventh segment with two elevated tubercles.

SPECIES 1.—RUMIA CRATÆGATA[q].—(Plate LIX., Figs. 26—28.)—This species varies from 1⅛ to 1⅔ inch in the expanse of the wings, which are of a bright brimstone colour; the costa of the fore ones marked at the base, before and beyond the middle, and at the tip, with ferruginous patches; from the second and fourth of these patches arise two slight dusky strigæ of lunules (variable in intensity), and the third is connected with an oval patch of grey scales, bordered with rusty-red; the hind wings slightly marked with dusky. The caterpillars vary from fawn to grey, varied with white; or brownish varied with deep brown; the head orange, as well as the two anterior pairs of central prolegs. It feeds on whitethorn, sloe, etc.; and the moth appears in April, June, and August, and is very abundant.

[q] SYNONYME.—*Phal. Geom. crataegata*, Linnæus; Hübner; Albin, pl. 40. fig. 65, e—h; pl. 46, fig. 76, 77, a—e; pl. 95, fig. e—h; Wilkes, pl. 80; Harris, Aurelian, pl. 20, fig. g—l; Stephens; Wood, fig. 490.

OURAPTERYX, Leach. ACÆNA, Treitschke.

This very distinct form is at once characterised by the acute tips of the fore wings, and the tailed hind ones; the head small; palpi short; spiral tongue long; antennæ simple in both sexes; the caterpillar long, slender, ten-footed, and with a bifid tail; and the chrysalis enclosed in a cocoon of leaves, held together with silken threads.

Species 1.—Ourapteryx sambucaria[r]—(Plate LIX., Figs. 29, 30, and 13, at foot of plate)—varies from $2\frac{1}{4}$ to $2\frac{1}{2}$ inch in the expanse of the wings, which, as well as the body, are pale yellow; the fore wings with two straight darker strigæ, the inner one extending also across the hind wings, which are marked with a dark spot on each side of the tail. The caterpillar dark brown, with darker lines speckled with white: it feeds on various trees; and the moth, which is very common, appears about the end of June.

[r] Synonyme.—*Ph. Geom. sambucaria*, Linnæus; Donovan, 5, pl. 170; Albin, pl. 94, fig. a—d; Wilkes, pl. 78; Curtis, pl. 508; Stephens; Wood, fig. 491.

CAMPÆA, Lamarck. METROCAMPA, Latreille, Boisduval.

This genus is closely allied to the last, but the male antennæ are pectinated, and the hind wings much less strongly tailed; the fore wings are also slightly angulated in the middle, and the larvæ are twelve-footed and depressed, somewhat resembling those of the genus Catocala, the sides being fimbriated.

Species 1.—Campæa margaritaria[s].—(Plate LIX., Fig. 32, and Plate LX., Fig. 42.)—This pretty species measures from $1\frac{3}{4}$ to 2 inches in expanse of the wings, which are of a pale, pearly greenish-white; the fore wings with two pale strigæ, each edged towards the middle with brownish, and the outer one extending across the middle of the hind wings. The caterpillar is greenish and brown at the sides, with white spots and black streaks, and an orange-coloured head. It feeds on various forest-trees, and the moth appears about the beginning of August, and is common in woods.

[s] Synonymes.—*Phal. Geom. Margaritaria*, Linn.; Fabricius; Donovan, vol. xvi. pl. 343.
Bombyx sesquitriata, Borkhausen, Esper.
Geometra bipleuraria, Villars.
Geom. vernaria, Hufnagle.

ELLOPIA, Stephens. METROCAMPA, pars Boisduval.

This genus is very closely allied to the last, but has the wings rounded and entire; the palpi very short; the antennæ bipectinated in the males. The caterpillar twelve-footed, and flattened beneath, and the chrysalis is enclosed in a web amongst the leaves.

Species 1.—Ellopia fasciaria[t]—(Plate LIX., Fig. 33)—measures about $1\frac{1}{2}$ inch in the expanse of the fore wings, which are greyish-red, with a broad, darker, central bar angulated towards the costa behind, and edged with a paler shade; the outer striga extending across the hind wings. The caterpillar reddish, varied with white and brown, with a red head. It feeds on fir; and the moth occurs in fir plantations, towards the end of June, and is not common.

[t] Synonymes.—*Phal. Geom. fasciaria*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 493.
Phal. Neustraria, Hufnagle.

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DESCRIPTION OF PLATE LX.

INSECTS.—Fig. 1. Hipparchus papilionarius (the large emerald). 2. The Caterpillar.
„ Fig. 3. Hemithea vernaria (the small emerald). 4. The Caterpillar.
„ Fig. 5. Hemithea smaragdaria (the Essex emerald).
„ Fig. 6. Hemithea cythisaria (the grass emerald). 7. The Caterpillar.
„ Fig. 8. Cleora bajularia (the blotched emerald). 9. The Caterpillar.
„ Fig. 10. Cleora Lichenaria (the lime moss). 11. The Caterpillar.
„ Fig. 12. Cleora viduaria (the speckled beauty).
„ Fig. 13. Cleora teneraria (the dotted carpet).
„ Fig. 14. Cleora cinctaria (the ringed carpet).
„ Fig. 15. Cleora pictaria (the grey carpet).
„ Fig. 16. Alcis repandaria (the mottled beauty). 19. The variety called mularia. 20. The variety called conversaria. 18. The Caterpillar.
„ Fig. 21. Alcis cericearia (the satin carpet).
„ Fig. 23. Alcis roboraria (the great oak beauty). 24. The Caterpillar.
„ Fig. 25. Alcis rhomboidaria (the willow beauty). 26. A dark variety. 27. The Caterpillar. 27. The variety called consobrinaria.
INSECTS.—Fig. 28. Alcis consortaria (the pale oak beauty). 29. The Caterpillar.
„ Fig. 30. Alcis fimbriaria (the bordered beauty).
„ Fig. 42 is the Caterpillar of Campæa margaritaria, figured in plate 9.
„ Fig. 22 is the Caterpillar of Boarmia abietaria, figured in plate 61.

All the insects figured in this plate are from the collection of Mr. Bentley, with the exception of H. smaragdaria, from a continental specimen in the British Museum, and A. fimbriaria, from the figure in Mr. Stephens's "British Entomology." The caterpillar of C. lichenaria is from one taken at Weybridge by Mr. E. Doubleday. The others are from Hübner.

Several caterpillars are represented in this plate upon the plant Clematis vitalba, although the food only of one of them; but the necessity of figuring so many insects on each plate, in order to keep the work within a small compass, prevents the possibility of introducing a separate plant for each caterpillar. This explanation will also apply to very many of the ensuing plates. H. N. H.

HIPPARCHUS, LEACH. GEOMETRA, BOISDUVAL.

The large size, slightly denticulated hind wings, elevated palpi, with the last joint naked, pectinated male antennæ, short, spiral tongue, Notodontiform tuberculated larva, and folliculated chrysalis, distinguish this genus from the other green Geometridæ.

SPECIES 1.—HIPPARCHUS PAPILIONARIUS[u].—(Plate LX., Figs. 1, 2.)—This large species measures from $2\frac{1}{6}$ to $2\frac{1}{2}$ inches in the expanse of the fore wings, which, as well as the hind ones, are of a deep grass-green (which soon fades), with a slight dusky lunule at the extremity of the discoidal cell, followed on all the wings by two wavy pale strigæ. The caterpillar is pale green, with rusty tubercles on the back; it feeds on the birch and other forest trees, and the moth appears towards the end of July in woods.

[u] SYNONYME.—*Ph. Geom. papilionaria*, Linnæus; Donovan, 8, pl. 287, fig. 1; Harris, Expos., pl. 13, fig. 1; Wood, fig. 494.

HEMITHEA, DUPONCHEL. HIPPARCHUS, PARS CURTIS.

The singular form of the linear striated larvæ, with a bifid head, and the feet when at rest applied close to the body, the first segment of which is armed with two deflexed spines; the chrysalis speckled; the antennæ of the males slightly pectinated, the green colour of the wings and the slender palpi, are the chief characters of this group.

SPECIES 1.—HEMITHEA VERNARIA[v].—(Plate LX., Figs. 3, 4.)—This pretty species measures about $1\frac{1}{3}$ inch in expanse; its wings are of a delicate whitish-green, the anterior with two, and the posterior with one slender white striga, the latter slightly angulated in the middle of the apical margin.

The caterpillar green, with pale stripes on the back and sides; it feeds on the oak, clematis, and other trees; and the moth appears at the end of July, in chalky places, but is uncommon.

[v] SYNONYMES.—*Phal. Geom. vernaria*, Linnæus; Hübner; Harris, Expos., pl. 8, f. 8; Stephens; Wood, f. 495.
Geom. chrysoprasaria, Esper.
Geom. æruginaria, Borkhausen.
Ph. Geom. volutata, Villers; Haworth.
Ph. Geom. lucidata, Donovan, 3, pl. 97.

SPECIES 2.—HEMITHEA SMARAGDARIA[w].—(Plate LX., Fig. 5.)—This species measures about 1½ inch in expanse. The wings are rich green, the fore ones with the costa ochreous, and two slender white strigæ, between which is a whitish spot; the hind wings pale at the base. Very rare. Reared from a larva by Mr. C. Parsons; found near South Church, Essex, on the 30th June, 1826; also taken near St. Osyth's, Essex, by Mr. Douglas, at the beginning of July.

Note.—Boisduval unites this species and Bajularia into his genus Phorodesma.

[w] SYNONYME.—*Phal. Geom. smaragdaria*, Fabricius; Esper; Curtis, Brit. Ent., pl. 300; Wood, fig. 496.

SPECIES 3.—HEMITHEA CYTHISARIA[a].—(Plate LX., Figs. 6, 7.)—This species measures about 1½ inch in the expanse, its wings being of a pale dull green colour (subject to fade), with two darker green flexuous strigæ, between which is a dark lunule, and a submarginal, paler, undulated striga, often obsolete, which also extends across the hind wings, behind a rather darker striga. The caterpillar is green, with pale lines. It feeds on the common broom, and the moth appears in July, and is common on heaths and warrens.

[a] SYNONYMES.—*Geometra cythisaria*, Wien. Verz.; Esper; Hübner; Wilkes, pl. 57; Stephens; Wood, fig. 497.
Phalæna prasinaria, Fabricius; Haworth.
Phalæna pruinata, Hufnagle.
Phalæna genistaria, Villars.

CLEORA, CURTIS*. PHORODESMA, TEPHROSIA, BOARMIA, PARS BOISDUVAL.

The antennæ are bipectinated in the males, but slender and setaceous in the females; the spiral tongue long; palpi short, and wings slightly dentated, and extended horizontally in repose; the abdomen tufted at the extremity in the males, but acute at the tip in the females; the larva are ten-footed, and somewhat tuberculated. They feed for the most part on lichens, and the chrysalis is enclosed in a cocoon amongst leaves.

SPECIES 1.—CLEORA BAJULARIA[b].—(Plate LX., Figs. 8, 9.)—This species measures 1¼ inch in expanse; the wings are of a delicate pale green, with the costa of the fore wings pale; a slender, curved, pale, whitish striga near the base, and another submarginal arising from a large pale blotch at the anal angle, with a fulvous centre; the hind wings with the margin irregularly pale, with a dark undulating line, and each angle with a patch of the same colour; cilia white, spotted with brown. The caterpillar is greyish-brown, and tubercular; it feeds on the oak, and the moth appears in oak woods in July, but is not abundant.

[b] SYNONYMES.—*Geometra bajularia*, Wiener Verz.; Harris, Aurelian, pl. 41, fig. 1; Hübner; Esper; Treitschke; Boisduval; Stephens; Wood, fig. 498.
Phalæna ditaria, Fabricius; Donovan, 6, pl. 202, f. 1; Haworth.
Phalæna pustulata, Hufnagle.
Phalæna bajularia, Boisduval.

SPECIES 2.—CLEORA LICHENARIA[c].—(Plate LX., Figs. 10, 11.)—This species measures 1⅓ inch in expanse; the wings are of a greenish-grey, and much freckled; the fore wings with an incurved striga, towards the base a central spot and a deeply curved and dentated black submarginal striga, which also extends across the hind wings; the margins spotted with black. The caterpillar is green or ashy, varied with blackish marks, and tubercular; it feeds on lichens, and the moth appears about the end of July in woods, especially where oak abounds.

[c] SYNONYMES.—*Geometra Lichenaria*, Wien. Verz.; Hübner; Haworth; Donovan, 10, pl. 342, fig. 1; Wood, fig. 499.
Geometra cineraria, Borkhausen.
Boarmia L., Boisduval.

SPECIES 3.—CLEORA VIDUARIA[d].—(Plate LX., Fig. 12.)—This species varies from 1⅓ to 1½ inch in the expanse of the fore wings, which are of a white colour thickly irrorated with black atoms, forming an incurved striga near the base; a broad, ill-defined fascia in the middle, open towards the costa, and followed by several

* Mr. Curtis appears, from his enumeration of the species which he regarded as referable to this genus, to have intended a group with simple antennæ, but he unfortunately drew his characters from a species which possesses pectinated antennæ, and does not associate with the others.

black spots, a submarginal row of dark lunules, and the margin with a row of black dots; the hind wings with a row of dusky dots across the middle. Taken in the New Forest, in June,

[d] SYNONYMES.—*Geometra viduaria*, Wiener Verz.; Hübner; Stephens, Ill. H. 3, pl. 30, fig. 2; Wood, 500.
Geometra angularia, Thunberg.

SPECIES 4.—CLEORA TENERARIA[e].—(Plate LX., Fig. 13.)—This species measures about 1¼ inch in the expanse of the fore wings, which are ashy-white, irrorated with dusky atoms, and four dark dots on the costa, from which arise the same number of nearly obsolete strigæ; a dark spot in the middle of all the wings, and a patch near the apex of the fore wings, the margin being sometimes dusky, with an undulated pale striga; the hind wings with an indistinct striga beyond the middle. Rare. New Forest, and near Edinburgh and Carlisle, about the beginning of July.

[e] SYNONYMES.—*Geometra teneraria*, Hübner; Stephens; Wood, fig, 501.
Geometra glabraria, Hübner; Treitschke; Duponchel; Boisduval.

SPECIES 5.—CLEORA CINCTARIA[f].—(Plate LX., Fig. 14.)—This variable species measures rather more than 1½ inch in the expanse of the fore wings, which are whitish, varied with ochreous, grey and brown, darker at the base and apical margin, the former with two incurved black strigæ, an oval ocellus in the middle, followed by two curved and waved pale strigæ, edged with dark lines; the margin spotted with black; the hind wings with several slender dark strigæ, and a central ocellus. Taken in the New Forest, in May and June.

[f] SYNONYMES.—*Geometra cinctaria*, Wien. Verz.; Treitschke; Boisduval; Hübner; Stephens; Curtis, Brit. Ent., pl. 88; Wood, fig. 502.
Geometra pascuaria, Esper.

SPECIES 6.—CLEORA PICTARIA[g].—(Plate LX., Fig. 15.)—Measures about 1⅛ inch in the expanse of the fore wings, which are ashy-brown, with two waved strigæ of dusky colour, between which is a dark spot; the hind wings paler, irrorated with dark scales along the anal margin; all the wings with a row of small black dots at the base of the ciliæ. Found in April and beginning of May, near Dartford, Charing, and other parts of Kent; but very rare.

[g] SYNONYME.—*Geometra pictaria*, Thunberg; Stephens (Cleora p.); Curtis, Brit. Ent., pl. 447 (Ephyra p.); Wood, fig. 503.

ALCIS, CURTIS. BORMIA, P. TREITSCHKE, BOISDUVAL.

This genus has the body long and slender; the wings large, and varied with grey or brown colours; the fore ones entire, and the hind ones subdentated; the palpi short, and the antennæ of the males not feathered quite to the tip; the hind tibiæ dilated, and furnished with a tuft of silken hairs. The caterpillars are generally smooth and cylindrical, with the fourth segment swollen, and the head often concealed within the following segment. The perfect insects are æstival in the time of their appearance.

SPECIES 1.—ALCIS REPANDARIA[h].—(Plate LX., Figs. 16, 18, 19, 20.)—This species measures from 1¾ to 2 inches in expanse. All the wings are clouded with grey, brown and ashy, an incurved ill-defined striga, near the base of the wing, a large dark patch at the extremity of the discoidal cell, beyond which is a dark striga deeply bidentate, followed by a submarginal, pale, denticulated striga, edged within with brown, extending also across the hind wings near the margin; they have also a slender striga across the middle. This is a very variable species, the Geom. destrigaria being much paler but more thickly atomose, and destitute of the middle striga.

GEOMETRA CONVERSARIA—(Hübner; Haworth; Donovan, pl. 514; Stephens; Wood, fig. 507; and our fig. 20)—is given as another variety by Boisduval; this has the fore wings ashy-grey, with a broad, dark brown or blackish bar across the middle of all the wings, externally biangulate on the outside in the fore wings.

ALCIS MURARIA—(Curtis; Stephens; Wood, fig. 506)—is another probable variety, which has the fore wings of a more uniform, ashy-brown, or grey colour, with the strigæ towards the base of the wings nearly obsolete, and those of the posterior margin darker coloured; the hind wings also, with two strigæ, more distinct towards the anal margin.

The caterpillar is buff, or ashy-grey, with darker shades and dusky dots down the back, and a pale line on each side; it feeds on birch and other forest trees; and the moth appears in July, and is very common in woods. The supposed variety A. muraria, is found on walls in the north of England, and is rather smaller than the southern specimens.

[h] SYNONYMES.—*Phal. Geom. repandata*, Linnæus; Hübner; Donovan, 10, pl. 333, fig. 1; Haworth; Stephens; Wood, fig. 504.
Geometra destrigaria, Haworth; Wood, fig. 505 (variety).

SPECIES 2.—ALCIS SERICEARIA[i].—(Plate LX., Fig. 21.)—This species measures nearly 2 inches in the expanse of the fore wings, which are silky brown, with "a space at the base very dark, a transverse spot near the middle black; an indented transverse line beyond the spot, and an obscure, interrupted waved line near the posterior margin; nervures black. Inferior wings fuscous at the base; a transverse obscure spot towards the centre; beyond which is a waved transverse line, dark on the internal, light on the external edge; limb speckled with longish ochraceous spots."—Curtis, loc. cit. Taken in the New Forest, near Lyndhurst, in July, where it appears to be attached to the oak.

[i] SYNONYME.—*Alcis sericearia*, Curtis, Brit. Ent., pl. 113; Stephens; Wood, fig. 508.

SPECIES 3.—ALCIS ROBORARIA[k].—(Plate LX., Figs. 23, 24.)—This fine species varies from $2\frac{1}{6}$ to $2\frac{1}{2}$ inches in the expanse of the fore wings, which are pale, greyish-ash, varied with luteous, and pulverose, with four very much interrupted, nearly equidistant, somewhat interupted, brown strigæ; the basal one much incurved; the two middle ones nearly united on the hind margin, forming a dark patch, and the fourth followed by a pale waved line; the hind wings with three brown strigæ; the middle one much dentated and with a central lunule; along the apical margin of all the wings are some dark dots. Varieties occur with the strigæ nearly obsolete. The caterpillar is ashy-brown, with brown arched lines and pale dots; it feeds on the oak and beech, and the moth appears at the end of June, frequenting the woods in the south of England, but far from common. A further description of the caterpillar is given in the "Entomologist," p. 229.

[k] SYNONYMES.—*Phalæna Roboraria*, Fabricius; Hübner; Haworth; Donovan, 15, pl. 527; Stephens; Wood, fig. 510.
Phalæna leucophearia, Villers.
Geometra grandaria, Haworth olim.
Geometra piperitaria, Haworth; Stephens's Cat. (variety).

SPECIES 4.—ALCIS RHOMBOIDARIA[l].—(Plate LX., Figs. 25, 26, and 27.)—This very common insect measures about $1\frac{5}{6}$ inch in expanse, the wings being of a shining mouse-grey, not much irrorated, and with four dentated strigæ much interrupted, the second (carried across the hind wings) bearing a dark lunule; the third very close to the second at the hinder margin, and the fourth almost obsolete; beyond the middle of the hind wings is a slender dentated striga, and another submarginal one darkest next the anal margin. The insect is very variable, not only in the ground-colour of the wings, as represented in our two figures, but also in the strength of the strigæ.

GEOMETRA CONSOBRINARIA, of Haworth (but not of Hübner); Stephens; and Wood's fig. 512, may possibly be another variety, from which it is described by the first-named author as scarcely differing, except in the grey wings with ferruginous atoms, and the pale subapical striga of all the wings obsolete. *Alcis australaria*, Curtis, has "a deep ochraceous tinge with powerful markings."

The caterpillar is greenish, with a red head; the first three segments darker coloured; the sides of the body yellowish, and with two slender dark lines. The perfect insect is very common in woods, hedges, and gardens, in July.

[l] SYNONYMES.—*Geometra rhomboidaria*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 511, *Geometra gemmaria*, Borkhausen.

SPECIES 5.—ALCIS CONSORTARIA[m].—(Plate LX., Figs. 28, 29.)—This species measures about 2 inches in the expanse of the fore wings, which are pale, greyish-ashy, and pulverose, with four somewhat indistinct, dentated, darker strigæ, of which the second and third closely approximate behind, and the fourth is considerably dentate. The hind wings are marked by a central, brown, annular spot, and three strigæ, the middle one of which is occasionally dilated into a brown fascia; the margin of all the wings with some dark spots. The caterpillar is pale greyish-brown, varied with small dark dots and lead-coloured marks. It feeds on the poplar, willow, etc., and the moth appears in June, frequenting woods in the south of England.

[m] SYNONYME.—*Phalæna consortaria*, Fabricius; Hübner; Donovan, 10, pl. 333, fig. 2; Wood, fig. 509.

SPECIES 6.—ALCIS FIMBRIARIA[n].—(Plate LX., Fig. 30.)—This species measures 1½ inch in expanse, all the wings being of a dull ashy-buff from the base to beyond the middle; the fore ones with a central black dot, and various small black markings at the base and along the costa; in the middle of the hind margin is a furcate black mark, being the evident rudimental base of two obliterated strigæ, which may also be traced in several black dots on the veins above; the hind wings have a central dark lunule, followed by a dentated brown striga; the apex of all the wings dark brown, in which are the rudiments of a pale striga. Mr. Stephens's unique specimen is believed to be from Suffolk,

[n] SYNONYME.—*Alcis fimbriaria*, Stephens, Ill. Haust., pl. 30, fig. 1; Wood, fig. 513.

DESCRIPTION OF PLATE LXI.

INSECTS.—Fig. 1. Hemerophila abruptaria (the waved umbre).
„ Fig. 2. Tephrosia tetragonaria (the square spot).
„ Fig. 3. Tephrosia abietaria (the ingrailed). 22 in Plate 60 is the Caterpillar.
„ Fig. 4. Tephrosia crepuscularia (the small ingrailed). 5. The Caterpillar.
„ Figs. 26 and 27. Small varieties of abietaria or crepuscularia, called Consonaria and Strigularia, probably late broods.
„ Fig. 6. Tephrosia extensaria (the brindled white spot).
„ Fig. 7. Tephrosia punctularia (the grey birch). 8. The Caterpillar.
„ Fig. 9. Halia Vauaria (the common V moth). 10. The Caterpillar.
„ Fig. 11. Numeria pulveraria (the barred umber). 12. The Caterpillar.
„ Fig. 13. Cabera pusaria (the common white wave). 14. The Caterpillar. 15. A variety called rotundaria.

INSECTS.—Fig. 16. Cabera exanthemaria (the common wave).
„ Fig. 17. Ephyra omicronaria (the mocha).
„ Fig. 18. Ephyria pendularia (the birch mocha). 19. A variety. 24 and 25. The Caterpillar and Chrysalis.
„ Fig. 20. Ephyra orbicularia (the dingy mocha).
„ Fig. 21. Ephyra porata (the false mocha). 22. The Caterpillar of punctaria, a nearly allied species.
„ Fig. 23. Ephyra trilinearia (the clay triple-lines).

With the exception *H. abruptaria*, and *B. abietaria* and *crepuscularia* from Mr. H. Doubleday, the whole of the insects in this plate are from the cabinet of Mr. Bentley. The Caterpillars are from Hübner and Freyer.

I have not figured Ephyra Punctaria, as my specimen so closely resembled Porata that I scarcely thought them distinct. On examining others, however, I find that a dark line traversing both wings is much more defined and regular than in Porata, where it is only represented by a wavy cloud. Punctaria will be figured in the supplemental plate at the end of the work. H. N. H.

HEMEROPHILA, STEPHENS. BOARMIA, PARS BOISDUVAL.

The antennæ of the males are bipectinated nearly to the tip; the palpi are short but distinctly visible, with the tip obtuse, and the terminal joint scarcely visible; the wings are large, with the apical margins dentated, of

a pale ochre colour, with slender undulated but very oblique strigæ, and the hind wings with numerous slender black striolæ.

SPECIES 1.—HEMEROPHILA ABRUPTARIA[l].—(Plate LXI., Fig. 1.)—This species measures about 1⅝ inch in expanse; the wings are of a luteous-buff colour; the costal and apical margin of the fore ones varied with brown, and with a slender black waved, very oblique line beyond a central dot, followed by a dark cloud; the hind wings much more strigose and dark in the middle, through which runs a black waved line. This is not a very common species; occurring in gardens and woods at the beginning of June.

[l] SYNONYMES.—*Phal. abruptaria*, Thunberg; Stephens; Wood; Ind. Ent., fig. 514. | *Geometra petrificata*, Hübner; Duponchel; Boisduval. *Phal. Geom. suberaria*, Donovan, 7, pl. 251, fig. 1; Haworth.

TEPHROSIA, BOISDUVAL. BOARMIA, TREITSCHKE (EX PARTE).

The antennæ of the males in this genus, as restricted by our English authors, are pilose beneath, instead of pectinated, as in the last genus; the palpi short and horizontal, with the terminal joint minute; the hind wings with the margin dentated, and the disc of all the wings pale and much freckled; the fore tibiæ are furnished with a broad spur in the middle.

SPECIES 1.—TEPHROSIA TETRAGONARIA[m].—(Plate LXI., Fig. 2.)—This species measures rather more than 1½ inch in expanse; the wings are pale ashy-white varied with brown, a duplicated brown bar towards the base, followed by an indistinct central line, and beyond the middle are two curved pale lines, the first generally edged with black, and the second dentated, and between these is a dark quadrate patch in the middle; the hind wings less varied with brown, but with two dark strigæ towards the anal margin, and a dark central lunular spot. Birch Wood, Kent, beginning of May, but rare.

[m] SYNONYME.—*Boarmia tetragonaria*, Curtis; Stephens; Wood, fig. 515; Brit. Ent., pl. 280.

SPECIES 2.—TEPHROSIA ABIETARIA[n].—(Plate LXI., Fig. 3, and Plate LX., Fig. 22, larva.)—This species measures rather more than 1½ inch in expanse; the wings are grey and atomose, with denticulated, more or less distinct, dusky, or occasionally ferruginous strigæ running across all the wings; the chief vein of the fore wings dotted with black, and a dusky shade in the place of the quadrate patch near the apical margin of the fore wings, the basal strigæ of the fore wings also often obsolete, Found in woods in March and April, but not common, The caterpillar of Hübner's Abietaria (which may possibly not be congenerous with our insect) is rusty-brown, with the front of the body darkest, the hinder segments more straw-coloured, and varied with slender dark lines and marks.

[n] SYNONYME.—*Geometra abietaria*, Wien. Verz.; Treitschke; Haworth; Stephens; Wood, fig. 516.

SPECIES 3.—TEPHROSIA CREPUSCULARIA[o]—(Plate LXI., Figs. 4, 5)—measures rather more than 1½ inch in expanse, with the ground-colour of the wings almost white and atomose, and with denticulated brown strigæ running across the wings, variable in intensity and in number in different specimens; the costa with several dark dots, from which originate the strigæ; the apical margin of all the wings marked with dark triangular dots. Found in May, June, and July in woods, and not rare. The caterpillar is of a buff colour, with white longitudinal streaks and dusky lateral patches, the under side darker. It feeds on the columbine. A further description of it is given in the "Entomologist," p. 262.

[o] SYNONYMES. — *Geometra crepuscularia*, Hübner; Haworth; Treitschke; Stephens; Wood, fig. 517. | *Geometra biundularia*, Esper. *Phalæna similaria*, Hufnagle.

SPECIES ? 4.—TEPHROSIA CONSONARIA[p].—(Plate LXI., Fig. 26.)—This species (if, indeed, it be not a small variety of the last insect) measures about 1½ inch in expanse; the wings being ashy and atomose, with very much interrupted scarcely undulated strigæ running across all the wings; the fore ones brown, and a striga near the

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apical margin, white, but ashy within the apical margin, with black dots. Taken in the middle of May and also in July, in the woods of Kent and Surrey, but rare.

[p] SYNONYME.—*Geometra consonaria*, Hübner; Haworth; Stephens; Wood, fig. 518.

SPECIES ? 5.—TEPHROSIA STRIGULARIA[q].—(Plate LXI., Fig. 27.)—This species measures rather less than $1\frac{1}{2}$ inch in expanse; the wings are "ashy-white clouded with grey, and finely sprinkled with fuscous, with several very obsolete, common, slightly denticulated, fuscescent strigæ, varying in number in different specimens; the hinder margin of all the wings with black spots." Taken in the Kent woods in July, but rare. This may possibly also be a variety of T. crepuscularia.

[q] SYNONYME.—*Boarmia strigularia*, Stephens; Wood, fig. 519.

SPECIES 6.—TEPHROSIA EXTERSARIA[r]—(Plate LXI., Fig. 6)—measures $1\frac{1}{2}$ inch in expanse; the wings are greyish-ashy, much irrorated and atomose, but not distinctly strigose, as the preceding species, especially in the hind wings; the fore wings with a subapical whitish denticulated striga, in the middle of which is a large pale whitish patch; the hind wings are very obscurely strigose; a pale striga is, however, generally present near the margin. Taken in woods in the metropolitan district in June and July, but very rare.

[r] SYNONYME.—*Geometra extersaria*, Hübner; Haworth; Treitschke; Stephens; Wood, fig. 520.

SPECIES 7.—TEPHROSIA PUNCTULARIA[s].—(Plate LXI., Figs. 7, 8.)—This species measures from 1 to $1\frac{1}{4}$ inch in expanse, and has the wings of a hoary-white colour, very thickly atomose, and with three or four equidistant undulated arched strigæ of brown, considerably interrupted and running across all the wings (the fourth striga pale, and very much dentated), but often obsolete upon the hind ones; the cilia in all the wings are white dotted with brown. The ground-colour of the wings varies from ashy-white to grey and deep ashy-brown. The caterpillar feeds on the birch, and is of a deep brownish colour, the segments after the third marked with a white patch on the back, at the union of the segments, striated with brown, and with a pale line above the feet. The perfect insect is common in woods in May.

[s] SYNONYME.—*Geometra punctularia*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 521.

HALIA, DUPONCHEL.

This genus has the antennæ bipectinated nearly to the tips in the males; the pectinations rather short, the palpi short, with the basal joint elongated; the fore wings triangular, and the hind ones rounded and entire. The caterpillars elongated and slightly hairy, and the pupa enclosed in a slight cocoon.

SPECIES 1.—HALIA VAUARIA[t].—(Plate LXI., Figs. 9, 10.)—This common insect measures about $1\frac{1}{4}$ inch in expanse. The wings are ashy-white, or pale ashy-brown, with four generally equidistant chocolate-coloured patches on the costa, the third of which is slender and oblique, and the fourth larger and rather square; adjoining the second is a dark mark like the letter <, thus placed; this in the female is detached from the second costal spot, which is closer to the first than in the males; beyond this is a row of minute dark dots placed on the veins; the hind wings are nearly immaculate, but with a small dusky spot in the middle. The ground-colour of the wings is variable. The caterpillar is brownish or greenish, spotted with black and slightly hairy, and with a pale dorsal line and yellowish lateral ones. It feeds on the garden species of Ribes; and the moth appears in June and July, and is extremely common in gardens.

[t] SYNONYMES.—*Phalæna Geometra Vauaria*, Donovan; Stephens; Wood, fig. 522; Albin, pl. 47, fig. 78, a—d; Wilkes, pl. 86; Harris; Aurelian, pl. 34. f. g—i.

Geometra Wauaria, Linnæus*; Haworth; Hübner.

Geometra Viduaria, Müller.

Halia Wavaria, Boisduval.

Geometra Vau nigraria, Hatchett, in Ent. Trans., Old Series, 1, pl. 7, f. 3; Haworth (variety).

* Vulgo W. littera, Linn.

NUMERIA, Duponchel.

This genus has the wings large, rounded, and entire; the disc very strongly atomose, and with a broad central dark bar. The antennæ of the males are bipectinated; the palpi are short and obtuse; the spiral tongue short; the caterpillars are long, slender, and attenuated in front, with the head notched and the hinder segments tubercled.

Species 1.—Numeria pulveraria[u].—(Plate LXI., Figs. 11, 12.)—This species measures from 1⅛ to rather more than 1½ inch in expanse; the wings are of a buff-red colour, very thickly powdered with dusky atoms, and with a broad central dark brown bar of variable form and extent, of which the basal edge is straight and transverse, and the outer one very irregular; the hind wings with an obsolete dusky striga running from the anal margin. The caterpillar is reddish-brown with straw-coloured streaks; the terminal segments more varied with the latter colour and dark tubercles. It feeds on various forest trees, and the moth appears at the beginning of June, and is rather common in woods.

[u] Synonyme.—*Phalæna Geometra pulveraria*, Linnæus; Hübner; Boisduval; Haworth; Stephens; Wood, fig. 523; Albin, pl. 96, figs. d—f; Harris, Aurelian, pl. 42, fig. o.

CABERA, Treitschke (ex parte).

This genus has the antennæ bipectinated nearly to the tip; the palpi are short, scarcely extended above the clypeus; the wings are delicate, entire, pale, thickly pulverose, and with simple strigæ. The caterpillars are long, slender, and smooth, with two minute spines on the anal segment. Several of the species appear to be double-brooded.

Species 1.—Cabera pusaria[v].—(Plate LXI., Figs. 13, 14.)—This species measures about 1¼ inch in expanse; the wings are white, freckled with minute dusky atoms, and with three equidistant, very slightly waved dusky strigæ, of which the second and third extend across the hind wings; these strigæ are, however, more or less obsolete, and vary slightly in their juxtaposition. The caterpillar is green, with the anterior segments and a dorsal spot on each of the following of red-brown, the latter edged with white. It feeds on various forest trees, and the moth appears in May and again in July or August, and is very abundaut in woods.

[v] Synonymes.—*Phalæna Geometra pusaria*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 524; Albin, pl. 118, fig. e—h; Harris, Aurelian, pl. 44, fig. h. *Phalæna strigata*, Scopoli.

Species 2.—Cabera rotundaria[w]—(Plate LXI., Fig. 15)—measures 1¼ inch in expanse; the wings are rounded and white, slightly irrorated with dusky atoms and with two slightly undulated dusky strigæ extending across the wings, the first of which is geminated in the fore wings. Probably a variety of the preceding, as that differs in the juxtaposition of the strigæ, on which the present species seems chiefly to rest for its claim to be considered as distinct from the preceding.

[w] Synonyme.—*Geometra rotundaria*, Haworth; Stephens; Wood, fig. 525.

Species 3.—Cabera exanthemata[x].—(Plate LXI., Fig. 16.)—This species varies from 1 to 1¼ inch in expanse. The wings are of a dirty white colour, with a buff tinge much sprinkled with pale brown atoms, and with two slender strigæ of the same colour, which cross all the wings, the anterior pair having also a third striga nearer the base, which is, however, sometimes obsolete or more or less confluent with the middle one (G. approximaria, Haw.); when more thickly atomose, they form the G. arenosaria, Haw., which has sometimes the

strigæ entirely obsolete. The caterpillar is reddish above, with a pale line on the sides, and a white mark on each segment. It feeds on birch; and the moth, which is very common, appears in May, June, and August.

[x] Synonymes.—*Phalæna exanthemata*, Scopoli, Esper; Stephens; Wood, fig. 526.
Geometra striaria, Hübner; Haworth; Albin. pl. 92, fig. e—h; 99, fig. a—d.
Geometra arenosaria, Haworth (variety).
Geometra approximaria, Haworth (variety).

EPHYRA, Duponchel.

The species of this genus are very delicate in their general structure: the males have the antennæ bipectinated to some distance from the tip; the palpi are rather porrected, slender, and with the terminal joint long. The fore wings are elongate-trigonate, and with the tips slightly hooked; the disc generally marked with a small white dot; the hind wings often angulated in the middle; the hind tibiæ in the males have two, and those of the females four spurs. The caterpillars are long slender loopers, with the head depressed, and the body lineated. The chrysalides are of a curious form, being broad and truncated in front. This I find to be produced by the dilatation of the case of the wings and prothorax, which forms a kind of truncated hood over the head-case. They are attached by a thread at the tail, and girthed across the body, like those of the family of white butterflies.

Species 1.—Ephyra omicronaria[y].—(Plate LXI., Fig. 17.)—This pretty species measures about 1 inch in expanse. The wings are very pale yellowish-buff with blackish markings, a slender deeply scalloped streak near the base is followed by a large circular O-like mark, and beyond this a brown striga, followed by another deeply dentated; a narrow dusky subapical cloud, and a row of marginal dark dots. These strigæ and marks vary in intensity. The caterpillar is green, and slightly mottled; it feeds on the maple, and the moth, which is common in woods, appears at the beginning of June, and again in August.

[y] Synonymes.—*Geometra omicronaria*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 427.
Phalæna annularia, Fabricius.

Species 2.—Ephyra pendularia[z].—(Plate LXI., Figs. 18, 19, 24, 25.)—This delicate insect measures about 1 inch in expanse, and has the wings hoary-white, with slight flesh-coloured freckles; two strigæ formed of brown or chocolate dots, one before and the other beyond the middle of the wings, which are marked with a ring of the same colour, which in some specimens joins a fascia of a purplish-brown, also with a subapical dusky striga. The caterpillar is green, with a red head, and yellow lines on the sides, and some white patches on the back; it feeds on the birch and alder; the moth appears at the beginning of June and in August, and is common in woods.

[z] Synonymes.—*Phalæna Geometra pendularia*, Linnæus; Hübner; Haworth; Godart; Stephens; Wood, fig. 528; Albin, pl. 49, fig. 82, fig. a—d; Wilkes, pl. 74, fig. sup.
Phalæna circularia, Fabricius (variety).
Phalæna albipunctata, Hufnagle.

Species 3.—Ephyra orbicularia[a].—(Plate LXI., Fig. 20.)—This species measures about 1 inch in expanse, and has the wings ashy-brown and much freckled, with minute brown lines, with a small purple ring in the centre of each, surrounding a white dot, beyond which is a row of dark dots, forming an indistinct, somewhat dentated striga, the base of the wings also often with a similar but smaller series; the apical margin and also the centre of the wings occasionally with a brown or purplish fascia; the apical margin dotted with black. Found in woods in the south of England, but rare. *Obs.*—Wood's figure represents the hind wings rounded along the margin.

[a] Synonyme.—*Geometra orbicularia*, Hübner; Haworth; Stephens; Godart; Wood, fig. 529.

Species 4.—Ephyra porata[b].—(Plate LXI., Fig. 21.)—This species measures about 1 inch in expanse, and has the wings of a pale yellowish-buff colour, much freckled with reddish and brown atoms, the base of the

wings with a striga of dark dots followed by a white central speck, circled with dusky and followed by a curved brown or purplish bar, beyond which is another distant much-curved row of dark dots, the apical portion of the wing often shaded with purplish clouds. The ground-colour, irrorations, and strigæ are very variable. The caterpillar also varies very greatly from brown to greenish-yellow, mottled with paler colours. It feeds on various forest trees; and the moth, which is very common in woods, appears at the end of May and August.

[b] Synonymes.—*Ph. Geometra porata*, Linnæus; Stephens, Ill.; Wood, fig. 530; Albin, pl. 1, fig. 85, a—d. | *Geometra punctaria*, Hübner, but not of Linnæus. *Geometra ocellaria*, Haworth; Stephens's Cat.

Geometra ocellaria, Hübner, Wood, Plate LIV., Fig. 60, was incorrectly introduced into the British lists by Mr. Haworth in mistake for this species, but although Mr. Stephens corrected this error in his "Illustrations," Mr. Curtis, two years afterwards, disingenuously accused the latter author of this inaccurate citation.

Species 5.—Ephyra punctaria[c].—(Plate LXI., Fig. 22, Caterpillar.)—This species measures rather more than 1 inch in expanse, and has the wings of a reddish-buff colour, thickly irrorated with reddish-brown and dusky atoms, with an indistinct series of dots near the base, followed by a nearly straight, central, reddish-brown striga, beyond which is a much-curved row of dark dots, and some subapical, more or less obsolete, purplish clouds. The ground-colour and markings are very variable. The caterpillar is greenish or reddish-brown, with pale streaks on the sides. It feeds on the oak; and the moth appears at the end of May, and in August in woods, and is very abundant.

[c] Synonymes.—*Phalæna Geometra punctaria*, Linnæus; Haworth; Stephens; Wood, fig. 531. *Phalæna Geometra communifasciata*, Donovan, 13, pl. 456. | *Phalæna amataria*, Wilkes, pl. 74, fig. inf. *Geometra subangularia*, Haworth (variety).

Species 6.—Ephyra trilinearia[d].—(Plate LXI., Fig. 23.)—This species measures rather more than 1 inch in expanse, and has the wings of an orange-clay colour, traversed by three dark fasciæ, the middle one being the broadest, and nearer to the third or subapical one; the first and third strigæ are sometimes almost obsolete, and in fine specimens the ordinary central ocellus of the genus is also slightly visible. Found in woods in the south of England, but not common.

[d] Synonymes.—*Geometra trilinearia*, Borkhausen; Stephens; Treitschke; Duponchel; Wood, fig. 532. *Geometra linearia*, Hübner; Haworth.

Species (?) 7.—Ephyra albicinctata.—Haworth (p. 344) gives the following description of an insect, which has remained unique to the present time, and which has been referred to this genus:—"Wings black, each with a central white dot, and a white striga across all the wings near the apical margin." Formerly taken near Peckham, by Mr. Pickersgill. In the collection of J. Hatchett, and of the size and form of G. Alchemillata.

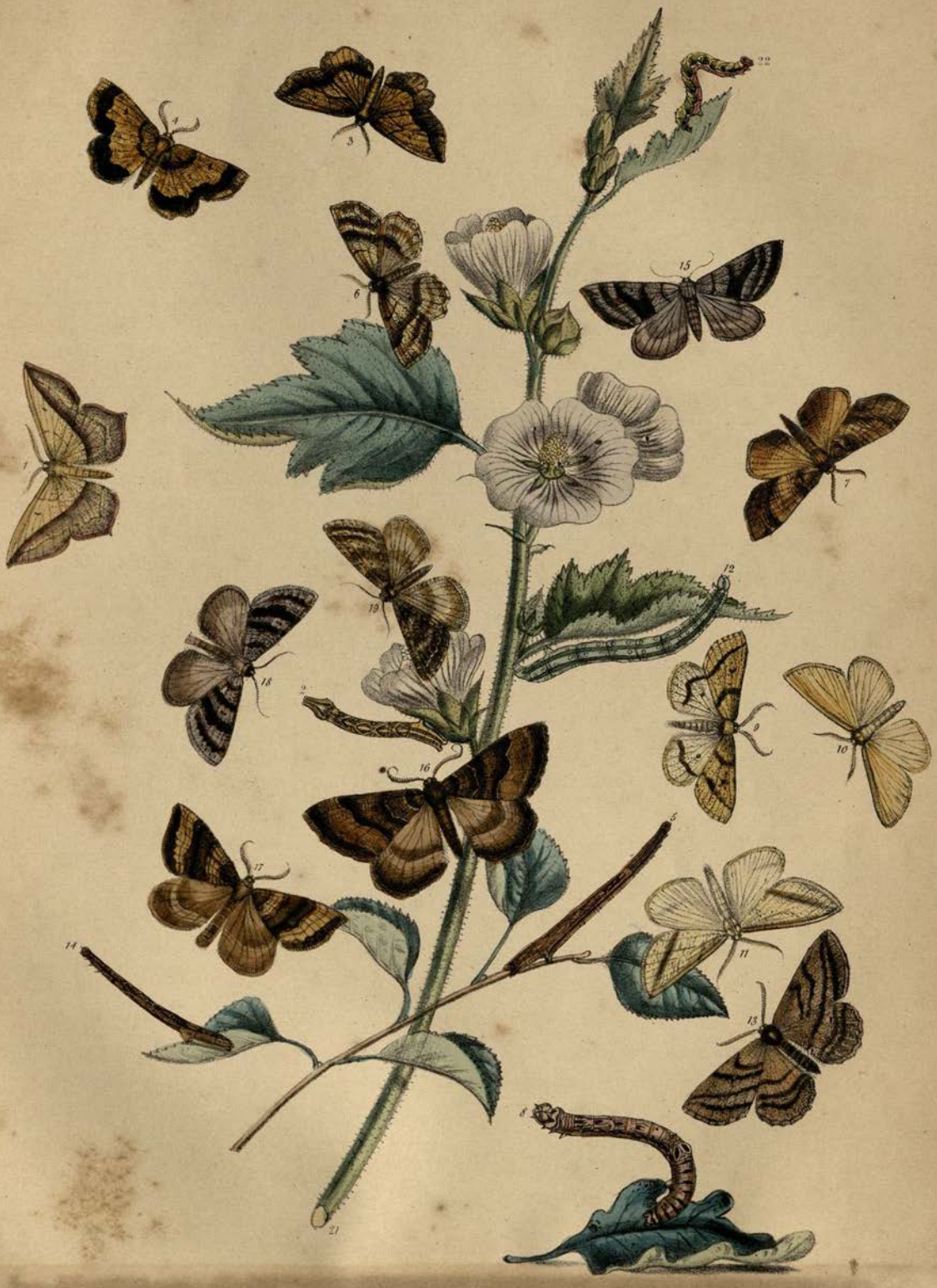
DESCRIPTION OF PLATE LXII.

Insects.—Fig. 1. Bradyepetes amataria (the blood vein). 2. The Caterpillar.
" Fig. 3. Epione apiciaria (the bordered beauty).
" Fig. 4. Epione vespertaria (the dark-bordered beauty). 5. The Caterpillar.
" Fig. 6. Epione advenaria (the little thorn).
" Fig. 7. Eurymene dolabraria (the scorched wing). 8. The Caterpillar.
" Fig. 9. Aspilates citraria (the yellow belle). 10. A variety.
" Fig. 11. Aspilates gilvaria (the straw belle).
" Fig. 13. Aspilates respersaria (the grass wave). 14. The Caterpillar.

Insects.—Fig. 15. Phasiane plumbaria (the belle).
" Fig. 16. Larentia cervinaria (the mallow). 12. The Caterpillar.
" Fig. 17. Larentia chenopodiaria (the small mallow). 22. The Caterpillar.
" Fig. 18. Larentia bipunctaria (the chalk carpet).
" Fig. 19. Larentia multistrigaria (the mottled grey).

Plant.—Fig. 21. Althæa officinalis (the marshmallow).

The whole of the insects in this plate are from the collection of Mr. Bentley; the caterpillars are from Hübner. H. N. H.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BRADYEPETES, Stephens. TIMANDRA, Duponchel, Bdv.

This genus has the antennæ rather strongly bipectinated nearly to the tip; the palpi slender and short; the fore wings acute and hooked at the tip, and the hind wings strongly angulated in the middle of the hind margin, traversed by a straight, dark, oblique striga. The caterpillar is short and thick, dilated in front towards the head, which is contractile. It feeds on low herbs.

Species 1.—Bradyepetes amataria[e].—(Plate LXII., Figs. 1, 2.)—This species measures about 1¼ inch in expanse. The wings are of a dull buff colour, traversed by a reddish, nearly straight fascia, from the apical angle of the fore wings to the middle of the inner margin of the hind ones; the fore wings have also a slight, and often nearly obsolete, dusky, curved line near the base, and a brown subcentral dot; and all the wings have a subapical, slender, dusky line, the apical margin itself pink. The caterpillar is greyish, varied with black and white streaks before and behind, and with diamond-shaped patches on the back, formed of black and white lines. It feeds on the sorrel and other low herbs; and the moth appears at the end of June, and is not uncommon.

[e] Synonymes.—*Phalæna Geometra amataria*, Linnæus; Hübner; Haworth; Donovan, 2, pl. 33, fig. 2; Stephens; Wood, fig. 533.
Phalæna vibicaria, Hufnagle.

EPIONE, Duponchel, Stephens.

This genus has the antennæ bipectinated to the tips in the males; the palpi very short; the fore wings acute at the tips, with the apical margin dilated, and rounded in the middle, and the hind wings deeply sinuated on the apical margin. The caterpillars are very long and slender, attenuated in front, and slightly hairy, and without tubercles; they feed on different trees, and the moths appear at the end of the summer.

Species 1.—Epione apiciaria[f].—(Plate LXII., Fig. 3.)—This species varies from 1 to 1⅓ inch in expanse, and has the wings of a light yellow-orange colour, freckled with red-brown, transverse, minute lines; a black dot on the middle of each, followed by a slightly-waved, slender, black striga, running to the apex of the fore wings, and followed by a purplish bar; the fore wings with a slender, deeply-angled, dark line, near the base. The caterpillar is grey, varied with white and black streaks and dots. It feeds on the willow, and the moth appears at the end of July, in damp lanes and woods.

[f] Synonymes.—*Geometra apiciaria*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 534.
Phalæna Geom. vespertaria, Donovan, 7, pl. 233, fig. 3, but not of Linnæus.
Geometra apicaria, Esper.
Geometra apriciaria, Samouelle.
Geometra marginaria, Villers.

Species 2.—Epione vespertaria[g].—(Plate LXII., Figs. 4, 5.)—This species measures about 1⅔ inch in expanse. It differs from the preceding in having the subapical striga much curved, and running nearly parallel with the apical margin of the wing, arising at some distance from the apex, and followed by a broad purplish or ashy-red bar. The female has the base of the fore wings also ashy-red. The caterpillar is ashy-brown, the anterior segments with straight, white, lateral stripes; the middle and hind part of the body mottled, with paler and dark markings, and white dots. It feeds on the hazel, and the moth appears in July. It has occurred in Yorkshire and the adjoining counties, but is very rare.

[g] Synonymes.—*Phal. Geom. vespertaria*, Linnæus; Stephens; Wood, fig. 535, but not of Donovan.
Geometra parallelaria, Wien. Verz.; Hübner.
Geometra affiniaria, Borkhausen.
Geometra repandaria, Hufnagle.

Species 3.—Epione ? advenaria[h].—(Plate LXII., Fig. 6.)—This dull-coloured insect measures rather more than 1 inch in expanse, and has the wings pale ashy coloured, with a slight, dusky, curved striga near the base of the fore wings; a broader dusky striga runs across the middle of all the wings, preceded by a dark, central dot on the hind wings, and followed by a still less distinct subapical striga, the apical portion of the wings being also slightly dusky, bearing a paler patch on the middle in the fore wings. The caterpillar is grey-brown, varied with black; the fifth segment with two white dots on the back, and the following mottled with grey and whitish. It feeds on Vaccinium Myrtillus; and the moth appears in June, and is found in woods, but is not common.

[h] Synonyme.—*Geometra advenaria*, Hübner; Haworth; Stephens; Wood, fig. 536.

Epione dilectaria, Hübner; Haworth; Wood, pl. 54, fig. 59; having the wings pale yellow, the fore ones with ferruginous spots and two strigæ, and the hind wings with one striga; has apparently been introduced into the English lists without sufficient authority, as no British specimen is known to exist.

EURYMENE, Duponchel.

This genus is distinguished by its narrow wings, which have the appearance of having been scorched; the apex of the fore ones being rather acute, and all being emarginate at the anal angle. They are destitute of strigæ, but are singularly marked with transverse dark lines. The antennæ are bipectinated nearly to the tip in the males, and the caterpillars are tubercled on the second and eighth segments. They feed on the oak and other forest trees, and the moth is æstival in its appearance in the perfect state.

Species 1.—Eurymee dolabraria[i].—(Plate LXXII., Figs. 7, 8.)—This species measures about 1⅓ inch in expanse, and has the wings of a reddish or yellowish-buff; the anal angle of all the wings, and the base of the costa of the fore wing, suffused with purple. Beyond the middle of the fore wings is a darker shade, terminating in a brown patch on the hind margin; and the whole wing is covered with fine short brown lines. The hind wings paler, and not strigose. The caterpillar is reddish or greenish-brown, varied with black spots and transverse lines, and with white dots. It feeds on the oak, lime, etc., and the moth appears at the end of June, in damp places in woods. It is a widely-dispersed and rather uncommon species.

[i] Synonymes.—*Phalæna Geometra dolabraria*, Linnæus; Hübner; Donovan, vol. x, pl. 349, f. 1; Stephens; Wood, fig. 537.
Phalæna ustularia, Hufnagle.

ASPILATES, Treitschke.

The antennæ are bipectinated to the tips in the males; the palpi horizontal, and moderately long, with the tip acute; the wings, when closed, form a triangle, and they have the apical margins entire, and of pale colours, crossed by transverse strigæ; the apex of the anterior ones being acute, especially in the females; and the hind wings are narrower in the female than in the male. The legs are very long and slender; the caterpillars are herbivorous, smooth, slender, and much elongated, and have the habit of twisting about in a serpentine manner; the chrysalides are enclosed in a loose web.

Species 1.—Aspilates citraria[j].—(Plate LXII., Figs. 9, 10.)—This species varies from 1⅛ to 1⅓ inch in expanse, and has the wings of a pale yellow straw colour, and with numerous dusky freckles; the fore ones generally crossed by two strigæ, of which the first is incurved near the base, and the second is towards the apical margin; between these strigæ is a dark dot; the hind wings have also a central dot, and beyond this

an irregular dusky or purplish striga; but these strigæ and dots are very variable, and sometimes, as in our fig. 10, entirely obliterated. Taken in clover-fields and waste places in various parts of the south of England, especially on the coast, and in the Isle of Wight, where I have taken it in abundance in August. One of my specimens presents the singular case of having the two wings on one side of the body confluent.

[j] Synonyme.—*Geometra citraria*, Hübner; Haworth; Treitschke; Duponchel; Stephens; Wood, fig. 540.

Species 2.—Aspilates gilvaria[k].—(Plate LXII., Fig. 11.)—This species measures from 1½ to nearly 1½ inch in expanse; the wings are of a pale ochre or straw colour; the fore ones freckled with brown, with a central dusky dot, beyond which is a straight dark bar, which extends nearly from the middle of the inner margin to the tips; the hind wings whitish-ochre, slightly pulverose, and with a central dot and fascia, more or less distinct. The caterpillar is brownish, with pale stripes, and a dull green line down the back; it feeds on Achillea millefolium. The perfect insect appears in August, and is found in different parts of Kent, especially behind the Castle at Dover, in profusion.

[k] Synonyme.—*Geometra gilvaria*, Wien. Verz.; Hübner; Haworth; Treitschke; Duponchel; Stephens; Curtis, Brit. Ent., pl. 467; Wood, fig. 541 ♂, and 539 ♀.

Species 3.—Aspilates respersaria[l].—(Plate LXII., Fig. 13.)—This dingy-coloured species measures rather less than 1½ inch in expanse; the wings are of a pale dull greyish colour, thickly sprinkled with brown atoms; the anterior with four, or more commonly only three, parallel, darker, yellowish-brown, nearly equidistant, straight strigæ; the two or three outermost of which are also represented in the hind wings. There is, however, considerable diversity in the depth of colour, position, and clearness of these strigæ, some of which are occasionally entirely obsolete. Specimens with four nearly equidistant strigæ, form the Ph. G. strigillaria, Hüb., Haw. Those with three equidistant strigæ are the G. respersaria of those authors; and those with three, but placed at unequal distances apart, the first and second being more approximated, form the Ph. G. inæquaria, Haw. The caterpillar is long, slender, and attenuated; the back black, varied with whitish markings, and the under side reddish-brown; it feeds on the broom, and the moth appears in June, frequenting heaths where broom abounds. It is a common species.

[l] Synonymes.—*Geometra respersaria*, Hübner; Haworth; Stephens; Wood, fig. 542. | *Geometra strigillaria*, Haworth; Hübner (variety). *Geometra inæquaria*, Haworth (variety).

Aspilates purpuraria, Linnæus; Stewart; Haworth; Hübner; Stephens; Wood, pl. 54, fig. 64; has the wings pale yellow, with two fasciæ, and the apical margin purple. Specimens are recorded to have been in Mr. Swainson's cabinet, but without any notice of their locality.

PHASIANE, Duponchel.

This genus has the palpi long, porrected into a short pointed beak; the antennæ of the males very slightly bipectinated; the wings, with the apical margins entire; the fore ones with the tip acute, and marked with two dark, slender strigæ near the base, and another beyond the middle, where there is a single dark spot; the hind wings nearly destitute of markings.

Species 1.—Phasiane plumbaria[m].—(Plate LXII., Fig. 15.)—This species measures from 1¼ to nearly 1½ inch in expanse, and has the wings of a leaden-ashy hue, the anterior with two slender straight red-brown strigæ, placed rather obliquely towards the base of the wings, and a third much more strongly marked beyond the middle, having a darker shade within; the centre being marked with a small dot of the same colour; there is

also a slender dash of the same colour running from the apex, and extending into a pale, slightly distinct, and dentated subapical striga; and the hind wings are paler, with a slender dusky central striga. The ground-colour of the wings, distinctness and position of the strigæ, are very variable, the latter sometimes approximating; the middle ones occasionally united into a broad dark central bar. This is a common and widely-dispersed species, frequenting heaths near woods, appearing in May, and again in August.

[k] Synonymes.—*Phalæna plumbaria*, Fabricius; Stewart; Haworth; Stephens; Wood, fig. 543. | *Phalæna Geometra palumbaria*, Wien. Verz.; Hübner. *Phalæna mucronata*, Scopoli.

LARENTIA, Stephens. EUBOLIA, pars Duponchel, Bdv.

As restricted by Mr. Stephens, this genus seems too closely allied to the preceding, having, like it, the palpi long and forming an acute beak, but with the terminal joint very minute, and the fore wings acute at the tip; but these are marked with a central transverse dark bar, formed of several parallel lines more or less undulated, and generally with a dark streak at the apex. The antennæ of the males are slightly bipectinated. The caterpillars are naked, and rather thickened behind, having ten feet.

Species 1.—Larentia cervinaria[n].—(Plate LXII., Figs. 16 and 12.)—This species measures from 1⅔ to nearly 2 inches, and has the fore wings reddish-brown; the space from the base to the first striga, and the broad bar between the second and third strigæ, dilated at the costa and dark brown, the edges of which are waved and bordered with a slender whitish line; within this bar are enclosed several dark lines; the apical margin is dark, but has a very slender undulated whitish line, and at the apex is a dark oblique dash; the cilia have a whitish line at the base. The hind wings are pale brownish, the basal portion lighter, with a slight dusky fascia beyond the middle, and the apical margin reddish-brown, with a slightly-defined, whitish, undulated line. The caterpillar is dull green, with darker longitudinal lines, and transverse rows of white dots. It feeds on the common mallow; and the moth appears in the middle of October, and is a widely-dispersed though not common species.

[n] Synonymes.—*Geometra cervinaria*, Wien. Verz.; Treitschke; Curtis, Brit. Ent., pl. 707; Stephens; Wood, fig. 544. *Geometra clavaria*, Haworth.

Species 2.—Larentia chenopodiata[o].—(Plate LXII., Figs. 17 and 22.)—This species measures from 1⅓ to 1½ inch in the expanse of the fore wings, which are of a dark, tawny yellow, or brown colour, the base, middle, and apical portion of the wing being darker brown; towards the base are several incurved, slender strigæ; beyond this is a narrow red-brown fascia, with the edges nearly straight, followed by a small black dot in the middle towards the costa; beyond the middle of the wing is a broader red-brown striga, waved on the edges, and dilated towards the costa; and beyond this a slender dark striga, the apical portion of the wing being darker, and with a slender oblique dash at the apex. The hind wings are pale brown, with two slender strigæ running across them beyond the middle. The caterpillar is yellowish-green, with dark lateral spots, and the under side of the body and feet flesh-coloured; it feeds upon grasses of different kinds, and the moth appears in July and August. It is a very common and widely-dispersed species. From its abundance, it was named by the old collectors the "Aurelian's Plague."

[o] Synonymes.—*Phalæna Geometra chenopodiata*, Linnæus; Haworth; Stephens; Curtis; Wood, fig. 545; Harris, Aurelian, pl. 33, fig. n. | *Geometra mensuraria*, Wien. Verz.; Hübner. *Phalæna limitata*, Scopoli.

Species 3.—Larentia bipunctaria[p].—(Plate LXII., Fig. 18.)—This species measures about 1⅓ inch in expanse, and has the wings of an ashy-white colour, traversed by very numerous, slender, wavy, darker strigæ,

and by four brownish-grey, nearly equidistant fasciæ, one near the base, but slightly distinct and incurved, the second broader before, and the third still broader beyond the middle of the wing, which is marked towards the costa with two small black dots; the outer fascia has its edge cut into scalloped waves, and the fourth fascia is very irregular, and often indistinct; from the apex of the wing runs a short, oblique, abbreviated dash of black. The hind wings are marked with very slight, rudimental, waved fasciæ. The caterpillar is ashy-grey, and slightly pilose, with longitudinal, dorsal, and lateral streaks. It feeds on trefoil and other low plants; and the moth appears in July and August, frequenting chalky districts, where it is not uncommon.

[p] Synonyme.—*Phalæna bipunctaria*, Wien. Verz.; Fabricius; Hübner; Treitschke; Haworth; Stephens; Wood, fig. 547.

Species 4.—Larentia (?) multistrigaria[q].—(Plate LXII., Fig. 19.)—This species varies from 1 to $1\frac{1}{3}$ inch in expanse. The wings are pale ashy-grey, the fore ones with numerous strigæ and waved fasciolæ of a dusky colour, as though composed of clouds and dark dots placed in transverse series upon the veins; several of these constitute four equidistant, incurved, and waved strigæ, darker than the rest, the space between the second and third being also somewhat darker, forming a central bar; the hind wings are paler coloured, with several rudimental dusky fasciæ beyond the middle. Taken on heaths, especially near London and in Norfolk, in March, but not a common insect. Its larva is, unfortunately, unknown.

This species recedes very greatly from the general character of the other species described above in the present genus. I, however, retain it in this situation on account of the pectinated structure of the male antennæ, which will prevent it from being associated with Oporabia dilatata, which possesses simple antennæ in that sex. How far the relation with Venusia cambrica and Oporabia may be considered to extend, must be left until a precise acquaintance with their preparatory states is obtained. I will only, however, observe that, if the affinity of these species be admitted, Lobophora rupestrata must also be associated with them. The species more particularly under consideration is interesting as forming one of the links between the Geometridæ with feathered antennæ and the great group of Carpet-moths (which it resembles in its markings) with simple male antennæ.

[q] Synonyme.—*Geometra multistrigaria*, Haworth; Stephens; Wood, fig. 548.

DESCRIPTION OF PLATE LXIII.

Insects.—Fig. 1. Cidaria didymata (the twin spot carpet).
„ Fig. 2. Cidaria munitata (the rufous carpet).
„ Fig. 3. Cidaria ferrugata (the red twin spot).
„ Fig. 4. Cidaria unidentaria (the dark-barred twin spot).
„ Fig. 5. Cidaria quadrifasciaria (the large twin spot). 6. The Caterpillar.
„ Fig. 7. Cidaria lateritaria (the northern twin spot).
„ Fig. 8. Cidaria salicaria (the striped twin spot).
„ Fig. 9. Cidaria miaria (the green carpet).
„ Fig. 10. Cidaria olivata (the beech green carpet).
„ Fig. 11. Cidaria montanata (the silver ground).
„ Fig. 12. Cidaria fluctuata (the garden carpet). 13. The Caterpillar.
„ Fig. 14. Cidaria propugnata (the flame carpet).
„ Fig. 15. Venusia cambrica (the Welch wave).
„ Fig. 16. Harpalyce fulvata (the barred yellow). 17. The Caterpillar. 18. The Chrysalis.

Insects.—Fig. 19. Harpalyce ocellata (the purple bar). 20. The Caterpillar.
Fig. 21. Harpalyce galiata (the galium carpet).
„ Fig. 22. Harpalyce tristata (the small argent and sable). 23. The Caterpillar.
„ Fig. 24. Harpalyce subtristata (the common carpet).
„ Fig. 25. Harpalyce sylvaticata (the wood carpet).
„ Fig. 26. Harpalyce unangulata (the sharp-angled carpet).
„ Fig. 27. Harpalyce biangulata (the cloaked carpet).
„ Fig. 28. Harpalyce silaceata (the small phœnix).
„ Fig. 29. Harpalyce corylata (the broken barred carpet). 30. The Caterpillar. 31. The Chrysalis.
„ Fig. 32. Harpalyce unilobata (the single-lobed).

The whole of the moths figured in this plate are from the rich cabinet of Mr. Bentley; the caterpillars and chrysalids are from Hübner and Freyer. H. N. H.

CIDARIA, Treitschke. ZERYNTHIA, Curtis. MELANTHA, Boisduval.

As the generic name proposed by Mr. Curtis for the genus of which the common garden Carpet-moth may be regarded as the type had been already employed in Lepidoptera by Ochsenheimer for a genus of butterflies, I have reverted to the name of Cidaria, employed for the former by Mr. Stephens. They have the antennæ of the males bipectinated; the pectinations short and pubescent, and not extending to the tip; the palpi are rather short; the wings rather short and broad, with the apical margins rather rounded and entire, the tips of the fore ones not very acute. The caterpillars are slender, smooth, naked, and varied with spots; they are ten-footed loopers, and the chrysalis is enclosed in a cocoon amongst the leaves. Some of the species appear in the perfect state in June and July, but others are double-brooded, appearing in May, and again in August.

Species 1.—Cidaria didymata[r].—(Plate LXIII. Fig. 1.)—Measures about 13 lines in expanse. Fore wings dull ashy-brown, with interrupted brown and white strigæ and fasciæ, so as to appear clouded; beyond the middle of the wing is a series of dark dots placed on the veins, followed by a darker space, in which is a conspicuous still darker blotch towards the apex, obtusely bilobed on the outside, and with a submarginal whitish series of slender waved lines. Hind wings with all the ciliæ brown, with two paler strigæ running across the middle. The female is much paler than the male, with much less brown. The ground-colour of the wing is variable in intensity. A widely-dispersed but rather local species. Taken at the end of July.

[r] Synonyme.—*Phal. Geom, didymata*, Linnæus; Haworth; Stephens; Wood, fig. 549.

Species 2.—Cidaria munitata[s].—(Plate LXIII., Fig. 2.)—This species measures about 14 lines in expanse. Fore wings pale mouse colour or ashy, the base and a central fascia of fulvous red, edged with a dark line on each side, the hind margin being sinuated but not angulated, and the centre with a few darker wavy lines; the remainder of the wing marked with indistinct striolæ, and a pale submarginal waved striga almost obliterated, several darker marks on the costa, and a dark oblique dash at the apex; hind wings almost destitute of markings; the strigæ very pale and indistinct. Taken in various parts of Scotland, but rarer in the south of England.

[s] Synonymes.—*Geometra munitata*, Hübner; Haworth; Stephens; Wood, fig. 550.
Phal. Geom. tristrigaria, Donovan, 13, pl. 461, fig. 2. (?)

Species 3.—Cidaria ferrugata[t].—(Plate LXIII., Fig. 3.)—This very variable species measures about 13 lines in expanse; it has the wings pale brown, with a buffish tinge, the base and a broad central bar of a reddish-purple colour, marked with numerous undulating darker lines; the central bar is very irregular and variable in its extent and distinctness, but less attenuated behind than in the allied species, and is preceded and followed by a paler space, through which undulate several dark lines; a chestnut-coloured patch is placed at the tip of the wings, and a brown one, sometimes divided into two, immediately behind a paler oblique one, and through it runs a pale subapical striga; the hind wings pale at the base, and much undulated, with slight strigæ; the abdomen with a double row of dark dots down the back. A very abundant species in hedges and lanes, at the end of May and in August.

[t] Synonymes.—*Phalæna Geometra ferrugata*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 553.
Geometra alchemillaria, Esper.
Geometra corculata, Hufnagle.
Geometra spadicearia, Wien. Verz.
Geometra linararia, Borkhausen.

Species 4.—Cidaria unidentaria[u].—(Plate LXIII., Fig. 4.)—This variable species measures about 1 inch in the expanse of the fore wings, and is very closely allied to the last, but is distinguished not only by

the brown colour of the base and central bar of the fore wings, which is much attenuated behind, and with the outer margin lobed in the middle; near the apex are two dark dots immediately behind a pale space, which extends to the tip, and the pale parts of the wings are traversed by several slender undulating waves, and with a pale, subapical, waved striga. The hind wings paler and more uniformly coloured, but traversed by numerous slender waved strigæ. The abdomen with two rows of dark dots down the back. The caterpillar is obscure greenish, with a dark and light longitudinal stripe down the side, and the hind segments spotted with darker colour. This is also a very common species, which appears in June and again in August.

[u] Synonymes.—*Cidaria unidentaria*, Haworth; Stephens; Wood, fig. 551; Albin, pl. 97, fig. e—h.
Geometra quadrifasciaria, Hübner (nec Linn.)

Species 5.—Cidaria quadrifasciaria[v].—(Plate LXIII., Figs 5, 6.)—Measures about 1¼ inch in expanse, with the fore wings brownish, with a fulvous reddish tinge, a small basal fascia, and another nearly solid, oblique, central one of dark colour, slightly incurved near the costa, and the middle of the outer margin deeply but obtusely lobed; the centre, towards the costa, with a black spot; beyond the fascia is a slight whitish striga, on which is placed a small dark, but often almost obsolete, duplicated spot toward the apex; and near this is a square darker spot upon the apical margin, which distinguishes this from the two preceding species. The caterpillar is light brown, with faint streaks and some black spots. It feeds on dandelion and other low plants; and the moth appears at the end of June and July, and is frequent in various parts of the country.

[v] Synonymes.—*Phalæna Geometra quadrifasciaria*, Linnæus; Haworth; Stephens; Wood, fig. 552.
Geometra badiata, Borkhausen.
Geometra ligustrata, Hübner (variety).
Geometra undulataria, Villers (variety).

Species 6.—Cidaria latentaria[w].—(Plate LXIII., Fig. 7.)—Varies from 12 to 15 lines in the expanse of the fore wings, which are ashy, varied with an ochreous tinge, and having seven or eight irregular waved strigæ, darkest at the costa, the space between two forming a broad, more or less decided, central fascia, with the outer margin crenated and edged with a whitish line, and with a central black dot; the apical margin with black dots, arranged in pairs; hind wings with irregular and rather indistinct waved strigæ, and a central dot. Taken abundantly on walls and rocks near Ambleside, at the beginning of June, by Messrs, Dale, Curtis, and others.

[w] Synonyme.—*Zerynthia latentaria*, Curtis, Brit. Ent., pl. 296; Stephens; Wood, Ind. Ent., fig. 554.

Species 7.—Cidaria Salicaria[x].—(Plate LXIII., Fig. 8.)—Measures rather more than 1 inch in expanse, and has the wings ashy-brown, with numerous undulated strigæ, alternately dusky and paler coloured, with a double or bilobed brown spot, and two squarish ones on the costa, close together, of a dirty red colour near the tip of the wings; hind wings pale ashy, scarcely freckled, with paler waved strigæ. Also found in the north of England and Scotland, but rare, in June.

[x] Synonyme.—*Geometra salicaria*, Hübner; Haworth; Stephens; Curtis; Wood, fig. 555.

Species 8.—Cidaria miaria[y].—(Plate LXIII., Fig. 9.)—This elegant species measures rather more than 1 inch in expanse of the fore wings, which are of a delicate green, with three patches of black on the costa, from whence originate the same number of slender white waved streaks, the space between the second and third of which is darker green, and terminates behind in a dark patch; there is also a black lunate spot near the apex, and an irregular, interrupted, whitish, submarginal striga; the extreme margin pale, with black dots, arranged in pairs; hind wings pale grey, with two or three paler strigæ across them beyond the middle; the margin dotted. Common in woods and lanes in June.

[y] Synonymes.—*Geometra miaria*, Wien. Verz.; Treitschke; Hübner; Esper; Stephens; Wood, fig. 556.
Phalæna viridata, Fabricius; Haworth; Villers.
Phalæna rectangulata, Hufnagle.
Geometra pectinaria, Fuessly; Donovan, vol. 14, pl. 479, fig. 1.

SPECIES 9[z].—CIDARIA OLIVATA.—(Plate LXIII., Fig. 10.)—This species measures rather more than 1 inch in expanse of the fore wings, which are of an olive-green colour (liable to fade); the base with a darker striga, and a broad, central, darker fascia, much narrower behind, and enclosing the small central dark dot; beyond this is a white, wavy, irregular line, and with the apical portion clouded and marked with several dark dots, edged externally with white; the margin with a row of dark dots; the hind wings scarcely strigose. Found in birch woods in various parts of the country, at the end of August, but rather rare.

[z] SYNONYMS.—*Geometra olivata*, Wien. Verz.; Hübner; Treitschke; Haworth; Stephens; Wood, fig. 557.

SPECIES 10.—CIDARIA MONTANATA[a].—(Plate LXIII., Fig, 11.)—This handsome species measures rather more than $1\frac{1}{3}$ inch in expanse of the fore wings, which are of a white colour, with a broad, irregular, luteous-brown bar across the middle, varied with grey scales, and having a central black spot; the base of the wing also luteous-brown, which also extends in slight patches along the costa, and on the principal veins of the wing; the apical portion clouded with indistinct grey and whitish strigæ, marked especially by dots on the veins; the hind wings with slightly-marked fasciæ, more distinct towards the anal margin. The caterpillar is brown, with white lines on the side. It feeds on the primrose, in the open parts of woods, where the moth occurs abundantly in June.

[a] SYNONYMES.—*Geometra montanata*, Wien. Verz.; Hübner; Treitschke; Stephens; Wood, fig. 558.
Geometra implicata, Villers; Haworth; Stephens's Cat.; Curtis.

SPECIES 11.—CIDARIA FLUCTUATA[b].—(Plate LXIII., Figs. 12, 13.)—This extremely abundant species measures from 1 to $1\frac{1}{4}$ inch in the expanse of the fore wings, which are of a dirty white, very much undulated on the pale parts, with fine ashy strigæ; the base of the wing dark brown; the centre with a large dark patch extending from the costa about half-way across the wing, where it terminates in a much narrower and paler bar, which extends to the hind margin; another dark smaller patch on the costa, near the apex, beneath which is a double-toothed dusky small spot, forming part of the subapical striga; the margin with black dots in pairs; the hind wings much waved with dirty white and pale grey strigæ, and a central dot. There is much difference in the intensity of the colour of the fore wings and their markings. The caterpillar is pale luteous or greenish, with dark dots on the back; it feeds on various garden plants, and the moth appears throughout the summer, frequenting gardens, settling on walls, palings, etc., and entering houses.

[b] SYNONYMES.—*Phalæna Geometra fluctuata*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 559; Albin, pl. 99, fig. *e—h*.
Phalæna costovata, Haworth (variety).

SPECIES 12.—CIDARIA PROPUGNATA[c].—(Plate LXIII., Fig. 14.)—This pretty species measures from 10 to 12 lines in expanse of the fore wings, which are of a dirty greyish-white, marked at the base and across the middle with a broad, clear, reddish fascia, the inner margin of which is edged with a dark curved bar, and the outer margin is irregularly sinuated and black, preceded by two slender, waved, black lines; the apical portion of the wing is more or less clouded, with whitish and greyish undulated strigæ, and often with a darker patch on the costa; the hind wings pale grey, with slight strigæ visible chiefly towards the anal margin. The antennæ of the males are but slightly pectinated, whence Boisduval unites it with Munitata into a distinct section in this genus, from which Mr. Curtis has removed it. Found not uncommonly in woods, in various parts of the country, in July.

[c] SYNONYMES.—*Geometra propugnata*, Wien. Verz.; Hübner; Fabricius; Haworth; Stephens; Wood, fig. 560.
Phalæna designata, Hufnagle.
Phalæna lyneeata, Donovan, 10, pl. 349, fig. 3.

VENUSIA, Curtis.

The antennæ in the males are bipectinated, the pectinations increasing in length to the tips; the palpi are very short and horizontal, not forming a beak in front of the head; and the fore wings are triangular-ovate, marked with numerous slender, undulated, entire strigæ. The relations of this genus with Larentia? multistrigaria have already been noticed (p. 31).

Species 1.—Venusia cambrica[d].—(Plate LXIII., Fig. 15.)—This species measures 1¼ inch in expanse of the fore wings, which are "light bright grey, with numerous sinuated strigæ, forming patches on the costa; basal striga a black thin line; a pale brown pair next, another fine dark pair before the middle, and a pair beyond it; the inner one black, as well as the nervures where they intersect it; the other is broader and yellowish-brown, and there is a pair of crenated brown strigæ towards the posterior margin; a line of seven sublunate brown spots at the base of the cilia" of all the wings; hind wings very slightly strigose. Taken near the Devil's Bridge, Cardigan. In the collections of J. C. Dale, Esq., and Mr. Bentley.

[d] Synonymes.—*Venusia cambrica*, Curtis, Brit. Ent., pl. 759 (October, 1839).
Eubolia erutaria, Boisduval, Ind. Meth. (1840).

HARPALYCE, Stephens. CIDARIA, Treitschke. ZERENE & ELECTRA, Curtis, MELANTHA, Bdv.

The carpet-moths composing this genus are closely allied to the Cidariæ, from which they differ in having the male antennæ not bipectinated; the fore wings are short and triangular, with the apical margins entire, and when at rest they are carried horizontally, forming a broad triangle. Like the Cidariæ, also, they have two of the teeth of the subapical striga near the costa darker than the rest. It is proper to observe, that there is great diversity in the arrangements proposed by recent lepidopterists as to the generic distribution of this and the following closely-allied groups. How far a precise knowledge of the larvæ of the different species will clear up the confusion remains yet to be determined.

Species 1.—Harpalyce fulvata[e].—(Plate LXIII., Figs. 16, 17, 18.)—This pretty insect measures about 1 inch in expanse of the fore wings, which are of a bright orange-yellow colour; the base with a slender, darker orange striga, and the middle of the wing with a broad, irregularly-sinuated, dark purplish-brown bar, being lightest on the costa, and edged on each side with a slender pale line; the tip of the wing pale, behind which is an oblique dark line, followed by a dark orange cloud; the hind wings pale yellowish-white. The caterpillar is pale green, with darker lateral lines, and a pale back. It feeds on the rose; and the moth, which is common and widely dispersed, appears in July.

[e] Synonymes.—*Geometra fulvata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 561; Harris, Aurelian, pl. 35, fig. 1.
Phalæna sociata, Fabricius; Stewart.

Species 2.—Harpalyce ocellata[f].—(Plate LXIII., Figs. 19, 20.)—This species measures rather more than 1 inch in expanse of the fore wings, which are of a white colour, the extremity having a pearly-brownish gloss; the base brown, varied with grey and fulvous scales, followed by several greyish patches; across the middle of the wing is a broad, irregular, dark brown fascia, with the margins more fulvous; the centre with several grey waves, which towards the costa surround a black dot; beyond the fascia are several slender, ashy, interrupted, short strigæ, running from the costa, the outermost terminating in a small black patch; hind wings with a small, dark, central dot, and the margin brownish. The caterpillar is brown, with the anterior segments

and a stripe above the feet grey; the back with angulated whitish markings. The moth appears at the beginning of June, and again at the end of August, in woods, and is a common and widely-diffused species.

[f] Synonymes.—*Phalæna Geometra ocellata*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 562.
Phalæna tridentata, Hufnagle.
Phalæna lynceata, Fabricius; Stewart; Turton.
Geometra fasciaria, Scopoli.

Species 3.—Harpalyce galiata[g].—(Plate LXIII., Fig. 21.)—This species measures from 1 to 1¼ inch in expanse of the fore wings, which are of a whitish colour, with a broad greyish-brown striga at the base, and a broad fascia across the middle of the wing, of more uniform width than in the preceding (which it otherwise closely resembles), its margins being irregularly lobed; between the extremity of this fascia and the apex is a dark patch on the costa, and the apical portion of the wings is more or less clouded with irregular strigæ and dark patches towards the apex; hind wings greyish at the base, and strigose. Found in May and June, and again in August, in various places along the southern coast; also near Dublin, and at Weston-on-the-Green.

[g] Synonyme.—*Geometra Galiata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 563.

Species 4.—Harpalyce tristata[h].—(Plate LXIII., Figs. 22, 23.)—This species measures about 1 inch in the expanse of the fore wings, the ground of which is of a pure white colour, varied with brownish-black markings; near the base of the wing is an angulated striga, preceded and followed by brown clouds and several dark dots on the veins; the centre of the wing is occupied by a brownish-black bar, very much angulated on the outer edge, and having a paler striga within, and an ocellated black spot in the middle; beyond this is a row of black dots on the veins on a white bar, and the apical portion of the wing is brownish-black, with a submarginal, irregular, whitish striga; the hind wings are strigose, especially along the anal margin, and the apical margin resembles that of the fore wings. The caterpillar is yellowish, with reddish-brown longitudinal streaks; it feeds on Galium verum, and the moth appears in June in various parts of the country, especially in the north of England.

[h] Synonyme.—*Phalæna Geometra tristata*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 566.

Species 5.—Harpalyce subtristata[i].—(Plate LXIII., Fig. 24.)—This species measures rather more than 1 inch in the expanse of the fore wings, the ground-colour of which is of a dirty white, much varied with greyish-brown markings; the basal portion of the wing is greyish-brown, with darker lines and whitish strigæ, and across the middle of the wing runs a broad fascia, not so strongly angulated on the outside as in the preceding species, and varied with paler undulated lines, and a black central dot; this is followed by a white fascia, through which runs a slender, pale brown, waved line, and the apical portion of the wing is grey-brown, with a pale, waved, subapical line. The hind wings have a central dark dot, and are very much waved, with greyish strigæ; the apical portion coloured as in the fore wings.

The perfect insect is very common in woods and hedges in May, and again in August.

[i] Synonymes.—*Phalæna subtristata*, Haworth; Stephens; Wood, fig. 567 (substriata).
Phalæna contristata, Donovan, 15, pl. 510, fig. 2.
Phalæna degenerata, Haworth (variety).
Geometra alchimellata and *amniculata*, Hübner.

Species 6.—Harpalyce sylvaticata[j].—(Plate LXIII., Fig. 25.)—This species measures about 1¼ inch in expanse of the fore wings. It is closely allied to the last insect, but is somewhat larger, of a purer white colour, with broader and more angulated strigæ. The fore wings are varied with white, ashy, and brown strigæ, the base being ashy-brown, followed by a white striga; the central fascia is marked with ashy and grey clouds, and has a black central dot and several black wedge-like marks on its outer edge; it is followed by a white fascia, scarcely marked with undulations; and the apical portion of all the wings is ashy, with a wavy white line, interrupted by a large paler patch in the centre. Taken in chalky districts, in July; but not very common.

[j] Synonymes.—*Phalæna sylvaticata*, Haworth; Stephens; Wood, fig. 568.
Geometra rivata, Hübner.

SPECIES 7.—HARPALYCE UNANGULATA[k].—(Plate LXIII., Fig. 26.)—This is another species, which measures about 1¼ inch in expanse, and is closely allied to the preceding, from which it is especially distinguished by the acute angle formed at the middle of the outer margin of the central fascia of the fore wings; in the middle of this fascia is the ordinary black stigma-like spot, and the costa is marked towards the apex with a square blackish spot, from whence extends a greyish bar, followed by a regularly-waved white striga; the hind wings have a central dot, and the base rather ashy, with the strigæ somewhat more distinct. Found in woods, but rarely, at the end of June and July.

[k] SYNONYME.—*Phalæna unangulata*, Haworth; Stephens; Wood, fig. 569.

SPECIES 8.—HARPALYCE BIANGULATA[l].—(Plate LXIII., Fig. 27.)—This species measures from 13 lines to rather more than 1¼ inch in expanse of the fore wings, which have the basal half suffused with olive-brown; the base paler ashy-green, with several slender darker strigæ; the broad central fascia dark olive-brown, with the outer margin in the middle with two strong angles; beyond this is a white fascia, followed by brown and grey wavy clouds, and several dusky dots, especially along the apical margin; the hind wings are ashy, generally marked with the ordinary strigæ; the apical margin with an olive tinge. The green colour fades into a dull buff hue. Found in woods in June, but not common.

[l] SYNONYMES.—*Geometra biangulata*, Haworth; Stephens; Wood, fig. 570; Harris, Expos., pl. 8, fig. 4.
Geometra picata, Hübner.

SPECIES 9.—HARPALYCE SILACEATA[m]. —(Plate LXIII., Fig. 28.)—This species measures about 1¼ inch in expanse of the fore wings, which are of a pale ashy-white; the base with a rather broad brown fascia, followed by a very broad central brown bar, deeply angulated in the middle of the inner margin, and with the outer margin trilobed, the middle portion being occasionally insulated by the pale branches of the median vein; towards the apex is a series of irregular-sized brown conical spots, and a patch of the same colour on the apical margin, the preceding space being more or less clouded. The hind wings are whitish, with the space beyond a pale angulated fascia rather more dusky. The caterpillar is described by Stephens as being bright green, with a duller lateral line, and a black dorsal one, and some yellowish-green spots behind, and as feeding on the aspen. Taken in July and August. A widely-dispersed but not common species.

[m] SYNONYMES.—*Geometra silaceata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 571.
Phalæna insulata, Haworth (male).
Phalæna cuneata, Donovan, 14, pl. 487, fig. 2.

SPECIES 10.—HARPALYCE CORYLATA[n].—(Plate LXIII., Figs, 29, 30, 31.)—This species measures about 1¼ inch in the expanse of the fore wings, which have the base fulvous-brown, followed by two dentated white strigæ, the space between which is greyish-buff; the central bar is fulvous-brown, with a black stigma, followed by a dentated white line; the apical portion of the wing varied with buff, brown, and white shades, and an irregular-waved subapical striga, interrupted by a pale patch at the apex and in the middle of the apical margin; the hind wings pale greyish, with light dusky strigæ. The caterpillar is pale yellowish, with a whitish lateral line; it feeds on various trees, and the moth appears in June, in woods.

[n] SYNONYMES.—*Geometra corylata*, Thunberg; Stephens; Wood, fig. 572.
Geometra ruptata, Hübner; Haworth; Donovan, 14, pl. 479, fig. 2; Albin, pl. 98, fig. a—d.

SPECIES 11.—HARPALYCE UNILOBATA[o].—(Plate LXIII., Fig. 32.)—This insect, as well as Ph. 4-annulata, Haworth, Stephens, and Wood, fig. 565, are considered by Mr. Stephens as probably varieties of H. Galiata. The former has the fore wings ashy and slightly clouded, with the base and a dark broad central bar of brown streaked with black, having a single rounded lobe on its outer edge; the extremity of the wing more dusky

with a white, interrupted, waved line. It has been taken occasionally in Yorkshire. The latter has the wings ashy, with three germinated strigæ and a costal spot of brown; between the base and middle bar is a white fascia, formed of four rounded spots, united together and edged with black. This insect has occurred at Wisbeach, and also in Devonshire.

[o] Synonyme.—*Phalæna unilobata*, Haworth; Stephens; Wood, fig. 564.

DESCRIPTION OF PLATE LXIV.

Insects.—Fig. 1. Polyphasia marmorata (the marbled carpet).
„ Fig. 2. Polyphasia centum-notata (the common marbled carpet).
„ Fig. 3. Polyphasia immanata (a variety of the preceding).
„ Fig. 4. Steganolophia prunata (the clouded carpet). 5. The Caterpillar. 6. The Chrysalis.
„ Fig. 7. Lampropteryx suffumata (the water carpet).
„ Fig. 8. Lampropteryx badiata (the shoulder stripe). 16. The Caterpillar.
„ Fig. 9. Anticlea Berberata (the raspberry carpet). 10. The Caterpillar. 11. The Chrysalis. 12. The Cocoon.
„ Fig. 13. Anticlea rubidata (the flame).
„ Fig. 14. Anticlea sinuata (the royal mantle).
„ Fig. 15. Anticlea derivata (the steamer). 17. The Caterpillar.
Insects.—Fig. 18. Electra comitata (the dark spinach).
„ Fig. 19. Electra populata (the poplar). 20. The Caterpillar.
„ Fig. 21. Electra spinachiata (the spinach).
„ Fig. 22. Electra testata (the chevron).
„ Fig. 23. Electra pyraliata (the barred straw).
„ Fig. 24. Celma imbutata (the Manchester treble bar).
„ Fig. 25. Anaitis plagiata (the slender treble bar).
„ Fig. 26.—Siona dealbata (the black vein).
Plant.—Fig. 27.—Galium sp.

All the moths in this plate are from the cabinet of Mr, Bentley, with the exeeption of Plagiata, Immanata, Spinachiata, Testata, Pyraliata, Derivata, Suffumata, and Ruptata, from fine specimens presented to me by Mr. Doubleday. The caterpillars are from Hübner. H. N. H.

POLYPHASIA, Stephens. ELECTRA, p., Curtis.

The insects of the genus formed under this name by Mr. Stephens are extremely variable in their characteristic markings. The antennæ are simple in both sexes; the fore wings are triangular, and comparatively larger and weaker than in the preceding species, with the apical margin entire; the palpi are porrected into a short acute beak, directed obliquely upwards; and the caterpillars are slender, smooth, and with two short tubercles on the terminal segment of the body. By the continental authors, the different species appear to be confounded into one, whilst Mr. Stephens separates them into eight; although in his Catalogue several of them were indicated as probable varieties of the others, which we consider the more natural arrangement.

Species 1.—Polyphasia marmorata[p].—(Plate LXIV., Fig. 1.)—This species varies from 1 to 1¼ on the expanse of the fore wings, which are clouded with ashy and ferruginous, and have a broad central fascia of white, more or less atomose, and edged with blackish-brown; the outer margin much produced, and acutely angulated; the apical portion of the wing ashy, tinged with ferruginous and brown clouds, through which runs an irregular, interrupted, white waved line .It is extremely variable in the colour of the ground of the wings, and in the intensity of the markings. Not common, although widely dispersed; although more especially found in the woods of Kent.

[p] Synonymes.—*Phalæna marmorata*, Fabricius; Haworth; Stephens; Wood, fig. 575.
Phalæna omicronata, Donovan, 15, pl. 510, fig. 1 (variety).

P. concinnata, Steph.; Wood, fig. 576 (given in Syst. Cat. as a variety of the preceding), has the fore wings ashy-grey clouded with black, and with an unsolid whitish fascia across the middle, acutely dentated on the outer margin, and with a white, angulated, subapical striga; the disk with a large black dot. Taken in Scotland, and probably identical with

P. boreata, Curtis (Brit. Ent., fol. 603), of which the fore wings have the narrow ferruginous fascia at

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the base obscure and not angulated, terminating in a white horseshoe on the inner margin; the broad central fascia not solid, but grey in the middle, and the posterior margin darker than in P. immanata. Taken on rocks near Arrachar, in Scotland, at the beginning of August.

SPECIES 2.—POLYPHASIA CENTUM-NOTATA[q].—(Plate LXIV., Fig. 2.)—This very variable species measures from 1 to 1¼ inch in expanse, and has the fore wings much spotted with brown, whitish-grey, and ferruginous, the base being ferruginous-brown, undulated with dark strigæ, beyond which is a very broad whitish fascia, preceded by a slender dark line, and having a central slender black dot, and the outer portion (especially towards the costa) dark brown, the margin much angulated and produced in the middle; beyond this the wings are much mottled, and have a slender, white waved line, preceded by a ferruginous bar; the hind wings almost destitute of strigæ.

This is a very abundant species, found in woods at the end of May, and again in August. The following are probable varieties of this species.

POLYPHASIA SATURATA, Stephens; Wood, fig. 579; which has the fore wings ashy-brown, with a paler fascia across the middle acutely dentated, and produced in the middle of the outer margin; the disk traversed with undulated strigæ, and with a central elongate black spot, an indistinct ferruginous bar, and a waved subapical whitish striga. Found in July, in various districts, but not common.

POLYPHASIA PERFUSCATA, Haworth; Stephens; Wood, fig. 580; which has the fore wings somewhat ashy, a simple black fascia at the base, and a broad central one produced on the middle of the outer edge, and strongly dentated; bordered with a pale striga, and having the usual black central dot; beyond this is a ferruginous streak, and interrupted white waved striga. Occurs at the same time and places as the preceding variety.

POLYPHASIA COMMA-NOTATA, Haworth; Stephens; Wood, fig. 577; is chiefly distinguished by the fulvous or luteous central fascia; the remainder of the wing being ashy-brown, and much mottled. It is common, occurring in the same woods with the former varieties, at the end of May, and again in the autumn.

[q] SYNONYMES.—*Phalæna centum-notatum*, Fabricius; Haworth; Stephens; Wood, fig. 575.
Geometra rupata, Wien. Verz.; Hübner.

SPECIES 3.—POLYPHASIA IMMANATA[r].—(Plate XLIV., Fig. 3.)—This insect is about the size of the preceding, from which, as well as the rest of the species of this genus, it is distinguished by the broad, solid, brownish-black central fascia, which is strongly dentated, and much more strongly produced in the middle of the outer margin, and more acute than in its allies; beyond this is a pale spot on the costa, gradually shaded into bright brown or ferruginous, and with a wavy, whitish, subapical striga. There is much variation in the tints of this insect, as well as in the central bar, being occasionally ashy in the middle, with a black spot. It is a common species, found in July, in woody places.

POLYPHASIA AMŒNATA, Stephens (given in "Syst. Cat." as a supposed variety of immanata), differs from it in having narrower wings, with the outer edge of the basal fascia very much angulated, and with a very broad, black, central fascia, dentated within, and very much produced in the middle of its outer margin; the process being composed of two lobes, of which the first is very broad and bifid, and the inner and shorter one very acute and simple. Found in Devonshire. Wood's fig. 574 does not well agree with this description.

[r] SYNONYME.—*Phalæna immanata*, Haworth; Stephens; Wood, fig. 573.

STEGANOLOPHIA, STEPHENS. ELECTRA, P., CURTIS.

The insect which Mr. Stephens has formed into the present genus is very closely allied to the last group, but has the palpi more elongated and beak-like; the males with a tuft of hairs near the base of the fore wings

beneath, and the strong central fascia more angulated on the inner margin, and less so on the outer margin; the hind wings are also more distinctly fasciated. The caterpillar is long, slender, swollen behind the slightly notched head, and with the extremity of the body rather thicker and rugose.

SPECIES 1.—STEGANOLOPHIA PRUNATA[s].—(Plate LXIV., Figs. 4, 5, 6.)—This handsome insect measures from $1\frac{1}{3}$ to $1\frac{1}{2}$ inch in expanse, The base of the fore wings orange-brown, with a darker slender waved striga, followed by a clouded orange bar, edged on each side with a whitish line, and very much angulated towards the hinder margin; then follows a very broad, brown, irregular bar bearing a slender, dark, parallel streak; and the extremity of the wing is marked with conical dark spots and a marginal patch of brown, as in Harpalyce Silaceata, to which it is nearly allied, as arranged by Mr. Haworth; the hind wings are pale brown and strigose. The caterpillar is pale greenish, with brownish markings on the back; it feeds on the currant and gooseberry, as well as on various trees, and the moth appears in July and August in lanes and gardens. It is a widely-dispersed but local insect.

[s] SYNONYMES.—*Phalæna Geometra prunata*, Linnæus; Fabricius; Donovan, 7, pl. 233, fig. 1; Harris, Exposition, 30, pl. 8, fig. 1; Haworth; Stephens; Wood, fig. 581. *Cidaria Ribesiaria*, Boisduval.

LAMPROPTERYX, STEPHENS. CIDARIA, P., BOISDUVAL. ELECTRA, P., CURTIS.

These insects have the wings glossy, and the apical margins obscurely dentated, the disk of the fore ones with a central fascia, and an oblique black dash at the apex; the palpi are very short, and scarcely visible from above; the antennæ of the males rather strongly ciliated, and the caterpillars smooth, cylindrical, and naked. The first species, in its markings, approaches closely to Steg. prunata, whilst S. badiata has a very different habit.

SPECIES 1.—LAMPROPTERYX SUFFUMATA[t].—(Plate LXIV., Fig. 7.)—This species measures about $1\frac{1}{4}$ inch in expanse of the fore wings, which are of a red-brown at the base, followed by a pale bar clouded with brown, beyond which is a broad rich brown bar irregularly toothed on both margins, followed by a slender whitish line; the extremity of the wing varied with brown and white shades and patches; the hind margin of the hind wings dusky brown. This is not a common species, but is widely dispersed. Taken in April and July.

[t] SYNONYME.—*Ph. Geometra suffumata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 582.

SPECIES 2.—LAMPROPTERYX PICEATA, Stephens; Wood, Fig. 583; measures $1\frac{1}{3}$ inch in expanse; for wings "very glossy, of a deep uniform pitchy-brown, with a deeper broad central fascia, in which is a black spot; its outer margin lobate, with a central lobe obtuse and entire; towards the apex of the wing is an interrupted striga composed of white spots, and at the apex is an oblique white streak."—Stephens. Found near Newcastle, and also in Yorkshire.

SPECIES 3.—LAMPROPTERYX BADIATA[u].—(Plate LXIV., Figs. 8, 16.)—This species measures rather more than 1 inch in expanse of the fore wings, which are of a buff colour, with the base and apex purplish-brown; the former with a curved dark fascia at the base, followed by a nearly straight one edged with a purplish-brown line, and followed by a pale space, which is succeeded by a deeply-waved bar, formed of several slender dark lines, beyond which is a dark buff space; the apical portion purplish-brown and with a dark oblique dash at the apex. Hind wings slightly strigose. The caterpillar is dirty green, and dotted on the back. The sides with a pale stripe; head and feet yellowish. It feeds on the wild rose; and the moth appears at the beginning of April, and again in the middle of the summer, and is common.

[u] SYNONYMES.—*Geometra badiata*, Wien, Verz.; Hübner; Haworth; Stephens; Wood, fig. 584. *Phalæna berberata*, Donovan, 14, pl. 493, fig. 1.

ANTICLEA, Stephens. CIDARIA, p. Boisduval.

This group is so closely allied to the preceding, that Boisduval unites the species together into his fourth division of the genus Cidaria. Mr. Stephens, however, separates them, on account of the simplicity of the antennæ in both sexes, those of the males being thickened at the base, the very short, obliquely-porrected palpi, the shortness and roundness of the wings, of which the anterior are traversed by a fascia at the base and an unsolid one on the disk, the outer edge of which is terminated behind in a series of slender dark arches.

Species 1.—Anticlea berberata[v].—(Plate LXIV., Figs. 9, 10, 11, 12.)—This species measures from 1 to 1¼ inch in expanse of the fore wings, which are ashy-red, with three dark fasciæ, one near the base, a second before, and the third beyond the middle; the last very deeply toothed on the outside, and almost obliterated towards the hind margin of the wing; the apex with a dark oblique dash preceded by a darker patch, and followed by an obscure, pale, undulated line. The caterpillar is brown, varied with dark and with white and red markings. It feeds on the barberry; and the moth appears in May and August, according to Boisduval, but Stephens states the middle of June. Taken in Berkshire and Oxfordshire.

[v] Synonyme.—*Geometra berberata*, Wien. Verz.; Hübner; Stephens; Wood, fig. 585.

Species 2.—Anticlea rubidata[w].—(Plate LXIV., Fig. 13.)—This species measures rather more than 1 inch in the expanse of the fore wings, which are of a rusty reddish-brown colour, with a dark patch at the base, and a broad, dark, central fascia, in which is a black dot, with the inner margin very much elbowed, and the outer margin preceded towards the costa by a darker shade, and terminated behind by five slender, deeply-waved, black lines; beyond which is a redder space, the extremity of the wing being pale brown, preceded by a slender, obsolete, whitish, undulated line; the hind wings slightly strigose. The caterpillar is green, with a dark line at the front and hind part of the body. It feeds on several species of Galium; and the moth appears in June and July, frequenting woods, but it is not a common species.

[w] Synonyme.—*Geometra rubidata*, Wien. Verz.; Fabricius; Hübner; Haworth; Stephens; Wood, fig. 586.

Species 3.—Anticlea sinuata[x].—(Plate LXIV., Fig. 14.)—This species measures rather more than 1 inch in expanse, and has the wings whitish or snowy, the base varied with brown and reddish strigæ, divided by pale waved lines; beyond the middle, on the costa, is a dark patch or abbreviated fascia, terminated externally in a series of dark arches, and followed by a reddish patch margined on each side with whitish, and with a submarginal, wavy, pale striga. The hind wings slightly strigose. The caterpillar is green, with a yellow stripe on each side, and a yellowish line edged with brown; it also feeds on the species of Galium, and the moth appears at the end of June. Taken in Kent, Devonshire, and Berkshire, but very rare.

[x] Synonyme.—*Geometra sinuata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 587.

Species 4.—Anticlea derivata[y].—(Plate LXIV., Figs. 15, 17.)—This species measures nearly 1¼ inch in expanse of the fore wings, which are of a pale fleshy-brown colour, the base and apex more dusky; the former with two strigæ, the second the broadest, and angulated in the middle; the centre of the wing plain, beyond which is a striga, very deeply angulated outwards, in the middle; the portion behind the angle being almost obliterated; the hind wings slightly strigose. The caterpillar is green beneath, with alternate lines of brown and white down the back, and a reddish head; it is, however, described by Stephens as green, with triangular spots, the legs and anus bright red, and as feeding on the dog-rose. It is rather a common species in gardens and woods at the beginning of June.

[y] Synonymes.—*Geometra derivata*, Wien. Verz.; Hübner; Harris, Expos., pl. 6, fig. 7; Haworth; Stephens; Wood, fig. 588.
Geometra violacea nigro striata, Villers.

ELECTRA, Stephens, Curtis (pars). CIDARIA, p. Treitschke.

These insects are distinguished by the yellow tints of their wings, marked with darker strigæ and fasciæ, the anterior pair of which are somewhat more elongate-ovate than in the last group, and with the tip acute and marked with an oblique fascia; the antennæ are simple in both sexes; the palpi porrected, forming a beak nearly as long as the head; the body is elongated, especially in the males, which have an anal tuft, and the caterpillars are long, smooth, and slender in front.

Species 1.—Electra comitata[z].—(Plate LXIV., Fig. 18.)—This species measures about $1\frac{1}{3}$ inch in expanse of the fore wings, which are of a yellowish-buff colour, clouded with fulvous, and with the middle of the wing occupied by a very broad bar of a greyish-brown colour; the middle pale, with a dark dot, the sinuated edges darker, and bearing several darker, parallel, curved lines; the base of the wings also with a darker fascia, and a darker oblique dash running to the apex; hind wings pale whitish-buff, and silky. The caterpillar is varied with green and brown, with a yellowish lateral stripe, and with a pale head striped with brown. It feeds on Chenopodium album; and the moth appears in July, flying about banks in various parts of the country, rather commonly.

[z] Synonymes—*Phalæna Geometra comitata*, Linnæus; Fabricius; Albin, pl. 47, fig. 79, f—i; Haworth; Stephens; Wood, fig. 589. | *Geometra chenopodiata*, Wien. Verz.; Hübner; Wilkes, pl. 71. *Phal. Geom. dotata*, Linnæus (variety).

Species 2.—Electra populata[a].—(Plate LXIV., Figs. 19, 20.)—Measures about $1\frac{1}{4}$ inch in expanse of the fore wings, which are pale yellow, with two strigæ, and the apical margin brown, the base often with an incurved striga; the middle of the wing with a broad, irregular, dark bar bilobed in the middle behind, and paler towards the costa and hind margin; a triangular pale patch at the apex, followed by a dark oblique dash and dusky cloud; hind wings almost destitute of strigæ. The caterpillar is green, varied with yellow, and with a yellow head. It feeds on the poplar; and the moth appears in July, in the north of England and Scotland.

[a] Synonymes.—*Phalæna Geom. populata*, Linnæus; Hübner; Haworth (Ent. Trans., 1, 337); Stephens; Wood, fig. 590, but not of Haworth; Lep. Brit. | *Ph. G. cuspidata*, Stewart.

Species 3.—Electra spinachiata[b].—(Plate LXIV., Fig. 21.)—This species measures from $1\frac{1}{3}$ to $1\frac{1}{2}$ inch in expanse of the fore wings, which are varied with yellow and fulvous, and having three angulated strigæ and an oblique dark dash at the apex, of brownish-yellow; the first striga is near the base, the second near the middle, and the third beyond it, all nearly rectangularly bent on the outside, the outer one with a simple lobe; the hind wings pale and spotless. Cilia yellow, with a row of distant brown dots. The caterpillar green, with a pale line on each side, edged above with dusky. It feeds on the gooseberry and currant; and the moth appears in gardens about the end of June, and is very common.

[b] Synonymes.—*Phalæna Geometra spinachiata*, Haworth; Stephens; Wood, fig. 591.
Geometra marmorata, Hübner.

Species 4.—Electra testata[c].—(Plate LXIV., Fig. 22.)—Varies from $1\frac{1}{6}$ to $1\frac{1}{3}$ inch in expanse; fore wings yellowish-grey, clouded with buff, with three slender brownish strigæ, at equal distances apart; the third almost bent at a right angle, and followed by a very broad bar, of a darker colour than the ground of the wing, with an indistinct central striga, and followed by a white streak along the outer margin, which is much bent; a pale triangular patch at the tip of the wings, behind which is a bright fulvous-brown shade; hind wings pale whitish, with the apex slightly darker, preceded by a slender white striga. It is variable in the intensity of its markings. Taken at the beginning of May and again in September, and widely dispersed, but less common than the last species.

[c] Synonymes.—*Phalæna Geom. testata*, Linnæus; Haworth; Stephens; Wood, fig. 592.
Geometra achatina, Hübner, fig. 301 (♂), 408 (♀); Stephens; Wood, fig. 593 (variety).

SPECIES 5.—ELECTRA PYRALIATA [d].—(Plate LXIV., Fig. 23.)—Measures about $1\frac{1}{4}$ or $1\frac{1}{3}$ inch in expanse; fore wings yellow, with three angulated strigæ, beyond which is a row of nearly obsolete dots, and a slight dark dash at the apex, of yellowish-brown; the strigæ are more approximated to the base of the wing and to each other than in the allied insects, they are also less angulated and slightly undulated; the hind wings are straw-white; variable in the development of the strigæ and row of dots. Caterpillar greenish, with the head and segments of the body yellow. It feeds on the whitethorn and other plants; and the moth appears at the end of July, frequenting gardens and hedges. It is a common species.

[d] SYNONYMES.—*Geometra pyraliata*, Wien. Verz.; Hübner; Stephens; Wood, fig. 594.
Geometra populata, Haworth, nec Linnæus; Albin, pl. 45, fig. 75, *d—g*.

CELMA, STEPHENS. LARISSA, PARS CURTIS.

Mr. Stephens has formed Geometra imbutata of Hübner into a distinct genus, on account of the very squamous palpi; the fore wings entire and sub-lanceolate, the shortness of the abdomen, and the simple antennæ of both sexes; the females are also smaller than the males.

SPECIES 1.—CELMA IMBUTATA [e].—(Plate LXIV., Fig. 24.)—Measures about 1 inch in the expanse of the fore wings, which are of a pale lilac-grey, with a straight oblique striga near the base, followed by a dusky cloud and a broad brown bar, before the middle of the wing, which is generally connected behind with another of the same colour beyond the middle, the latter being very irregular on the outer margin, and followed by a bright rosy-brown shade, with a darker cloud terminating in an oblique dark dash running to the tip of the wing, preceded by a pale line and a dark patch on the costa; the apex of the wing grey, spotted with black. Taken in heathy places, in the north of England and Scotland, in August.

[e] SYNONYME.—*Geometra imbutata*, Hübner; Stephens; Curtis, Brit. Ent., pl. 324; Wood, fig. 595.

ANAITIS, DUPONCHEL. APLOCERA, STEPHENS, OLIM.

This genus has the palpi long and beak-like; the antennæ simple in both sexes; the abdomen long and slender; the fore wings ovate-lanceolate, with the tip slightly acute, the disk traversed by slender undulated lines, arranged three together in the middle of the wings; the females larger than the males.

SPECIES 1.—ANAITIS PLAGIATA [f].—(Plate LXIV., Fig. 25.)—Measures from $1\frac{1}{2}$ to $1\frac{3}{4}$ inch in the expanse of the fore wings, which are pale grey, with a slender, curved, dark line, dentated towards the costa near the base, two fasciæ, each formed of three lines across the middle of the wings, followed by a bright brown dash running to the tip of the wings; the apical portion varied with brown, grey and whitish, with indistinct strigæ; hind wings whitish-grey. Taken in June and September, in woods, throughout the country. The caterpillar feeds upon Hypericum perforatum.

[f] SYNONYMES.—*Ph. Geom. plagiata*, Linnæus; Haworth; Stephens; Wood, fig. 596.
Phal. duplicata, Fabricius; Donovan, 7, pl. 233, fig. 2; Harris, Aurelian, pl. 28, f, k.

SPECIES 2.—ANAITIS PRÆFORMATA, Hübner [g].—Measures $1\frac{1}{2}$ to $1\frac{2}{3}$ inch in expanse; fore wings less acute and brighter coloured than in the last species, traversed by five bars, the second and fifth rather obscure. Mr. Curtis says he *believes* he caught a specimen of this moth by Coombe Wood. Wood's figure seems to represent

the preceding species; whilst his fig. 596, judging from the shape of the wings, seems to belong to a different genus.

[g] SYNONYMES.—*Geometra præformata*, Hübner; Curtis; Wood, fig. 597.?
Larentia cassiata, Treitschke.

SIONA, GODART. IDÆA, OCHSENHEIMER.

The antennæ are simple in both sexes; the palpi short, slender, and porrected obliquely beyond the head; the abdomen long and slender in the males; the fore wings subtrigonate, with the tips not acute; the disk above destitute of markings.

SPECIES 1.—SIONA DEALBATA[h].—Measures about $1\frac{3}{4}$ inch in expanse. The body and wings are of a yellowish-white colour, with the veins dusky; beneath white with black veins, with a dark fascia. Taken in woods in July, in the south of England, but not a common species.

[h] SYNONYMES.—*Phal. Geometra dealbata*, Linnæus; Hübner; Haworth; Stephens; Curtis, Brit. Ent., pl. 691; Wood, fig. 598.

DESCRIPTION OF PLATE LXV.

INSECTS.—Fig. 1. Abraxas ulmeta (the scarce magpie). 2. The Caterpillar.
„ Fig. 3. Abraxas pantaria (a variety of the preceding).
„ Fig. 4. Abraxas grossulariata (the magpie). 5 and 6. Varieties. 7. The Caterpillar. 8. The cocoon. 9. The Chrysalis.
„ Fig. 10. Melanippe hastata (the argent and sable). 11. The Caterpillar.
„ Fig. 12. Melanippe hastulata.
INSECTS.—Fig. 13. Zerene albicillata (the beautiful carpet).
„ Fig. 14. Zerene procellata (the chalk carpet).
„ Fig. 15. Zerene adustata (the scorched carpet).
„ Fig. 16. Zerene rubiginata (the blue bordered carpet).
„ Fig. 17. Zerene plumbata (the dark blue bordered carpet).

M. hastulata is from a specimen in the cabinet of Mr. H. Doubleday, kindly lent for the purpose of being figured in this work; he considers it a distinct species, and not a variety of hastata. The rest are from the cabinet of Mr. Bentley. H. N. H.

ABRAXAS, LEACH. ZERENE, DUPONCHEL.

The palpi are extremely short and slender; the antennæ short and simple in both sexes; the body rather short, and spotted with black; the wings large, ovate, rounded at the tips, and with the margins entire and marked with maculated fasciæ. The caterpillars are but slightly elongated, smooth, with a few hairs scattered over the body. The flight is slow and weak.

SPECIES 1.—ABRAXAS PANTARIA[i].—(Plate LXV., Fig. 3.)—Measures $1\frac{3}{4}$ inch in expanse of the fore wings, which are cream coloured, with the bar and a patch at the inner angle of fulvous, between which latter and the apical angle are several almost indistinct fulvous and grey spots; hind wings with a fulvous patch, at the anal angle, and two rows of fulvous and grey spots. Very rare: taken in Somersetshire, near Oakhampton Park, and Devonshire. As this insect is common in the south of France, appearing in May, whilst the next species does not generally appear till the following month, I doubt whether it ought to be regarded as a variety of the latter.

[i] SYNONYME.—*Geometra pantaria*, Linnæus; Hübner; Haworth; Stephens, Ill. H., 3, pl. 32, fig. 1; Wood, fig. 600.

SPECIES 2.—ABRAXAS ULMATA.—(Plate LXV., Figs. 1, 2.)—This species measures from $1\frac{1}{2}$ to $1\frac{5}{8}$ inch in expanse of the fore wings, which are white, with a dark fulvous-brown patch at the base, and another at the inner angle varied with silvery scales, a large patch of grey near the centre, behind which are several smaller ones, and a curved row of spots beyond the middle; the apical margin also irregularly grey; hind wings with a fulvous-brown patch at the anal angle, and a curved row of grey spots. The caterpillars vary much in colour, some being

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cream coloured, with yellowish extremities and the lateral stripe of the same colour and dotted with black, and others greenish-blue, with the extremities and numerous small dark lines of black. It feeds on the elm; the moth appears at the end of May and through the following month; it is found in various parts of the country, especially in the north, in some profusion.

SYNONYMES.—*Phalæna ulmata*, Fabricius; Hübner; Donovan, 9, pl. 293, fig. 1; Haworth; Curtis, Brit. Ent., pl. 515; Stephens; Wood, fig. 599. | *Phalæna Geometra sylvata*, Villers. *Geometra pantherata*, Borkhausen.

SPECIES 3.—ABRAXAS GROSSULARIATA[k].—(Plate LXV., Figs. 4, 5, 6, 7, 8, 9.)—Varies from 1⅓ to 2 inches in expanse of the fore wings, which are ordinarily white, with a black patch at the base, including a fulvous dash, some irregular black spots in the middle towards the costa, a curved black spotted bar beyond the middle, followed by a more irregular row of black spots, the space between being fulvous, and a marginal row of black dots; hind wings with the disk and margin spotted with black; body fulvous, spotted with black. The markings of this species are liable to endless variations, occasionally extending nearly all over the wing, and in others being nearly obliterated, as in the variety represented in my "Entomologist's Text-Book," pl. 5, from a specimen in the collection of Mr. Gray, of Dudley. The caterpillar is yellowish-white, with a fulvous stripe down each side, and numerous black dots, those on the back being the largest. It feeds on the currant, black-thorn, etc.; the chrysalis is black, with gold-coloured rings, and the moth appears in July and August.

[k] SYNONYME.—*Phalæna Geometra grossulariata*, Linnæus; Albin, pl. 43, fig. 71, d—g; Wilkes, pl. 85; Harris, Aurelian, pl. 12, fig. f—h; Hübner; Donovan, 1, pl. 4; Haworth; Stephens; Wood, fig. 601.

MELANIPPE, DUPONCHEL. ZERENE, P. CURTIS.

The palpi are porrected but short, with the terminal joint distinct; the antennæ slender and simple in both sexes; the wings entire, with the tip of the fore ones not acute; the disk marked with large, irregular, and very variable black blotches. The caterpillars are smooth, elongated, strigated, and with a rounded head.

SPECIES 1.—MELANIPPE HASTATA[l].—(Plate LXV., Figs. 10, 11, 12.)—Measures from 1⅓ to 1½ inch in expanse; wings white, with black markings; a large black patch at the base, with the outer margin waved, bearing a slender white line; across the middle of the wing a broad duplicated fascia, very irregular and variable, the outer part often obsolete, and interrupted near the hind margin; apical margin of the wing black, separated by a toothed white line from an irregular black bar which is broken in the middle, forming a white trident; hind wings varied with black markings, nearly resembling those of the fore wings. I have followed Boisduval in regarding hastulata as a variety, which differs (judging from the specimen represented in our fig. 12) in being somewhat smaller, and with the centre of the disk of the fore wing more thickly clouded with black markings, and a row of black dots beyond the middle of the wings; but these, as well as the trident white mark, appear here as well as in some specimens of hastata. The caterpillar is brown, with yellow lines at the sides. It feeds on the birch; and the moth appears in woods about the end of May, but it is not a very common insect.

[l] SYNONYME.—*Phalæna Geometra hastata*, Linnæus; Donovan, 4, pl. 129, figs. 1, 2, 3; Harris, Aurelian, pl. 15; Stephens; Wood, fig. 602. *Geometra hastulata*, Hübner (variety).

ZERENE, TREITSCHKE, NEC BDV. MELANTHIA, P. BDV.

These insects have a peculiar delicacy of appearance, arising from their pale white wings, banded or bordered with dark colours, and of a large size, with the margins entire. The palpi are porrected into a beak in front of

the head; the antennæ are slender and simple in both sexes; the body is of a moderate length; and the wings, when at rest, form a triangle. The caterpillars are smooth and slender, with the head depressed.

SPECIES 1.—ZERENE ALBICILLATA[m].—(Plate LXV., Fig. 13.)—This species measures rather less than $1\frac{1}{2}$ inch in expanse of the fore wings, which are white, with a large brown patch at the base, marked with grey waves; the centre of the wing almost immaculate; a large brown spot, varied with grey, near the extremity of the costa, from which runs a very thin waved line; the apical margin of the wing grey-brown, varied with white and darker shades; hind wings pale; the margin broadly brown, preceded by a slender line. The caterpillar is green, with a brown line at the sides of the anterior and posterior segments. It feeds on the raspberry; and the moth appears in woods in June, and is widely dispersed.

[m] SYNONYMES.—*Phalæna Geometra albicillata*, Linnæus; Donovan, 6, pl. 202, fig. 2; Haworth; Stephens; Wood, fig. 603.
Phalæna vestalis, Der Naturforscher, 13, pl. 3, fig. 7.

SPECIES 2.—ZERENE PROCELLATA[n].—(Plate LXV., Fig. 14.)—This species measures about $1\frac{1}{2}$ inch in expanse, and has the wings white, with the base, a patch beyond the middle of the costa, and the broad apical margin brown; the latter with a square white spot on the middle, preceded and followed by some white dots; the disk and fasciæ with slight indications of waved lines; hind wings white, with the margin brown, slightly strigose. Taken in July, in woods, in various parts of the country; not rare.

[n] SYNONYMES.—*Geometra procellata*, Wien. Verz.; Hübner; Treitschke; Haworth; Donovan, 6, pl. 202, fig. 3; Harris, Expos., pl. 5, fig. 6; Wood, fig. 604.

SPECIES 3.—ZERENE ADUSTATA[o].—(Plate LXV., Fig. 15.)—This species measures a little more than 1 inch in the expanse of the fore wings, which are cream-white, with a greyish-brown patch at the base; a deeply angulated fulvous-brown striga beyond the middle of the wing, followed by a grey-brown irregular bar, which is much clouded, and extends to the margin in the middle, being traversed by a slender waved white line; the hind wings are white, slightly dotted and waved. The caterpillar is green, with a white spot at the sides, dotted with red. It feeds on the spindle-tree, and the moth appears in June and August. It is a local but not very rare insect.

[o] SYNONYME.—*Geometra adustata*, Wien. Verz.; Hübner; Haworth; Harris, Expos., pl. 5, fig. 1; Stephens; Wood, fig. 605.

SPECIES 4.—ZERENE RUBIGNATA[p].—(Plate LXV., Fig. 16.)—This species measures from 9 to 13 lines in expanse of the fore wings, which are of a bluish-white, with a pale brown patch at the base; a large spot of the same colour in the middle of the costa, extending half-way across the wings, and mottled with paler brown and white, and bearing an ocellated black spot; the apical margin brownish-grey, darkest towards the apical angle, and traversed by a pale undulating line; the hind wings bluish-white, with a dark dot in the middle, and a pale brown border. The caterpillar is slender and green, striped with yellowish lines. It feeds on the alder; and the moth appears in June, and again in August, in woods, and is a widely-dispersed and not a rare insect.

[p] SYNONYMES.—*Geometra rubiginata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 606.
Phalæna albaria, Villers.
Geometra bicolorata, Hufnagle.

SPECIES 5.—ZERENE PLUMBATA[q].—(Plate LXV., Fig. 17.)—This species measures from 12 to 14 lines in expanse, and has the fore wings ashy-white, or lead coloured, with a dusky patch at the base; a broad one (much attenuated, and often interrupted behind) across the middle; the latter marked with paler strigæ, and a dark central dot; hind margin brown, with a pale waved striga; hind wings ashy-lead coloured, with a darker border, in which is a pale striga. Taken at the beginning of September, in Forfarshire.

[q] SYNONYMES.—*Zerene plumbata*, Curtis, Brit. Ent., pl. 643.
Xerene plumbata, Stephens, Ill.
X. contaminata, Stephens's Cat., but not of Hufnagle.

DESCRIPTION OF PLATE LXVI.

INSECTS.—Fig. 1. Euthalia miata (the autumn green carpet).
„ Fig. 2. Euthalia psittacata (the red-green carpet).
„ Fig. 3. Euthalia impluviata (the May high-flyer).
4. The Caterpillar.
„ Fig. 5. Euthalia elutata (the July high-flyer).
6. A variety. 7. The Caterpillar.
„ Fig. 8. A remarkable variety of the preceding species (horridaria).
„ Fig. 9. Phibalapteryx tersata (the Fern).
„ Fig. 10. Phibalapteryx vitalbata (the small waved ambre).
„ Fig. 11. Phibalapteryx lignata (the oblique carpet).

INSECTS.—Fig. 12. Phibalapteryx lineolata (the oblique striped).
„ Fig. 13. Phibalapteryx angustata (the narrow bordered carpet).
„ Fig. 14. Lozogramma petraria (the brown silver lines).
„ Fig. 15. Scotosia vetulata (the brown scallop).
16. The Caterpillar.
„ Fig. 17. Scotosia sparsaria (the small scallop).
„ Fig. 18. Scotosia rhamnata (the dark umbre).

The whole of the moths in this plate are from fine specimens in the cabinet of Mr. Bentley. The caterpillars are from Hübner. H. N. H.

EUTHALIA, STEPHENS (ILL.) YSIPETES, STEPHENS (CAT.)

These insects have the antennæ simple in both sexes; the palpi long and beak-like; the thorax with a bifid crest; the abdomen very long, and tufted at the tip in the males; the wings are large and entire, with green markings, and very irregular transverse fasciæ. The caterpillars are slender, slightly pilose, destitute of tubercles, and marked with longitudinal stripes. They have a peculiar vaulting flight at a considerable height, whence some of them are termed high-flyers by collectors.

SPECIES 1.—EUTHALIA MIATA[r].—(Plate LXVI., Fig. 1.)—This species measures from 12 to 15 lines in expanse, and has the fore wings greenish-ash, and with a fascia at the base, and another across the middle, darker coloured, as is also the apical margin, which bears an obscure, undulated, whitish striga; the margin of all the wings with a row of minute black dots, in pairs; hind wings whitish, with a brown central dot, and a submarginal striga of darker colour; variable in colour, the green changing to a fulvescent tinge. The caterpillar pale green, with red dots. It feeds on the bramble; and the moth appears in September. This insect is scarcely strictly congeneric with the true high-flyers, and is a common species.

[r] SYNONYMES.—*Phalæna Geom. miata*, Linnæus; Fabricius; Albin, pl. 50, fig. 86, e—h; Donovan, 14, pl. 497, fig. 3; Stephens; Wood, fig. 608. *Phalæna luctuata*, Fabricius.

SPECIES 2.—EUTHALIA PSITTACATA[s].—(Plate LXVI., Fig. 2.)—This species varies from 12 to 14 lines in expanse; fore wings clouded with green and red, with black undulations; the base with a fascia, and the middle with a broad bar of a greener tinge; beyond which, on the costa, and near the inner angle, is a paler blotch, which terminates in pale waved lines, often followed by a whitish undulated striga; the margin with a geminated row of black dots; hind wings brown, obscurely strigose. The perfect insect appears, like the last, in September, and frequents woods.

[s] SYNONYMES.—*Geometra psittacata*, Wien. Verz; Hübner; Fabricius; Haworth; Stephens; Wood, fig. 609. *Phalæna siterata*, Hufnagle. *Phalæna rubroviridata*, Donovan, 14, pl. 485, fig. 3.

SPECIES 3.—EUTHALIA IMPLUVIATA[t].—(Plate LXVI., Figs. 3, 4.)—This species measures about 1¼ inch in the expanse of the fore wings, which are of a greyish-brown, whitish or ashy colour, sometimes with a green tinge, with an oblique blackish streak near the base, a continuous fascia before the middle, often clouded, and with straightish edges, followed by a whitish space and a subapical one of brown—the latter not solid, with the edges more or less dentated and often divided into two parts; at the apex are also two oblique black lunules; the hind wings ashy or brownish, and scarcely strigose. The species is variable both in the tints and distinctness of the strigæ. The caterpillar is reddish-brown, with pale lines on the back and sides, and a reddish head. It feeds on the birch and hazel; and the moth appears at the end of May, flying in damp evenings, and frequenting the

woods of Kent, but not common there; more abundant in the north of England. We are informed by W. F. Evans, Esq., that he has reared this species from a caterpillar which fed on geranium, which went into chrysalis about Christmas, and the moth appeared early in the spring.

[t] Synonyme.—*Geometra impluviata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 610. | *Geometra trifasciata*, Borkhausen. *Phalæna literata*, Donovan, 14, pl. 499, fig. 2.

Species 4.—Euthalia elutata[u].—(Plate LXVI., Figs. 5, 6, 7, 8.)—Varies from 12 to 15 lines in expanse of the fore wings, which are extremely variable in their tints and markings. They are generally of a dull greenish colour, more or less clouded and streaked with black atoms, with a whitish blotch in the middle of the apical margin; this spot is sometimes dilated into a whitish striga, abbreviated towards the costa, whilst in others it is obsolete (thus becoming the species figured by Donovan), and in some the dark strigæ become confluent, forming indistinct fasciæ; whilst in others, again, the wings are beautifully fasciated, the intervening spaces being paler; the hind wings are brown. The caterpillar is grey, striped with black, with a reddish head and under side of the body. The perfect insect appears in July; it is a common species in woods.

[u] Synonymes.—*Geometra elutata*, Wien. Verz.; Hübner; Haworth; Albin, pl. 44, fig. 73, e—h; Wilkes, pl. 73. *Phalæna Geometra virgata*, Villers. | *Phalæna fusco-undata*, Donovan, xi. pl. 386, f. 3; Haworth (variety). *Ypsipetes horridaria*, Stephens's Cat. (variety).

PHIBALAPTERYX, Stephens. LARENTIA, Godart.

These insects have the antennæ simple in both sexes; the palpi very short and obtuse at the tip; the body short; the fore wings somewhat triangular, with the tips acute, and the disk with oblique strigæ; the hind wings small; the hind tibiæ are not dilated. The caterpillars are smooth and linear, with pale stripes and ten feet.

Species 1.—Phibalapteryx tersata[v].—(Plate LXVI., Fig. 9.)—Measures about $1\frac{1}{3}$ inch in expanse of the fore wings, which are of an ashy-brown colour, with numerous slender, oblique, dark, equidistant strigæ running across all the wings, and being most evident on the hind pair; the fore ones with a small black discoidal dot, and all the wings with a slender, undulated, whitish submarginal line. The caterpillar is brown, with a pale dorsal line varied with white, and with the sides varied with grey, brown, and black. It feeds on Clematis vitalba; and the moth appears in June, in woods and hedges, and is a rather common species.

[v] Synonyme.—*Geometra tersata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 612.

Species 2.—Phibalapteryx vitalbata[w].—(Plate LXVI., Fig. 10.)—Measures from 1 to $1\frac{1}{2}$ inch in expanse of the fore wings, which are fulvous or greyish-buff, marked with numerous, slender, dark and light strigæ; the costa, and a broad, oblique, brown striga, running from the apex nearly to the base of the innet margin; the hind wings also with a central fascia of brown, formed of confluent strigæ. Taken in woods and hedges, where Clematis vitalba occurs, but not very common.

[w] Synonyme.—*Geometra vitalbata*, Wien. Verz.; Hübner; Haworth; Stephens; Curtis; Wood, fig. 613.

Species 3.—Phibalapteryx lignata[x].—(Plate LXVI., Fig. 11.)—Measures about 1 inch in expanse of the fore wings, which are of a greyish-buff or pale ochreous, with many darker strigæ, and two oblique brown fasciæ, the anterior of which is ashy towards the costa, and marked with a black dot; and the outer one extends from the apex to the inner margin, being darkest behind; the antennæ of the males are strongly ciliated. This species seems to prefer marshy places, being taken in Battersea-fields, Cambridge, etc., but not common, at the middle of August.

[x] Synonymes.—*Geometra lignata*, Hubner; Haworth; Stephens; Curtis; Wood, fig. 614. *Geometra lineataria*, Donovan, xiv., pl. 485, figs. 1, 2.

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SPECIES 4.—PHIBALAPTERYX POLYGRAMMATA[y].—"Expansion of the wings 13 lines; dull ochreous; fore wings with numerous dark and pale lines superior, with a dark streak to the discoidal dot, and another oblique one beyond it, forming a fascia; posterior margin brown, with a pale streak at the apex; inferior with three or four straight bands, a crenated dark line and a pale one." Mr. Curtis (from whom this description is copied) states that he *believes* his specimen came from Cambridgeshire, and he *thinks* he once took it at Horning, in Norfolk.

[y] SYNONYMES.—*Geometra polygrammata*, Hübner; Curtis; Stephens's Cat., and Ill.; Wood, fig. 1676.
Phibalapteryx cognata, Stephens's Cat.

SPECIES 5.—PHIBALAPTERYX LINEOLATA[z].—(Plate LXVI., Fig. 12.)—Measures from 9 to 11 lines in expanse, and has the fore wings ashy with a leaden tinge, and marked with several oblique darker strigæ and two grey oblique fasciæ in the middle edged with white, between which is the ordinary dark dot; three pale strigæ towards the apical margin, with a brown streak at the apex; hind wings with several paler and darker strigæ, which are angulated towards the anal margin. The female is often darker, with the two central fasciæ united more or less incompletely. The caterpillar is reddish-brown, with a broad yellow line on each side, and a brown head; it feeds on Galium verum, and the moth appears from the middle of May to the middle of August, especially frequenting heaths.

[z] SYNONYME.—*Geometra lineolata*, Wien. Verz.; Hübner; Haworth; Stephens; Curtis; Wood, fig. 615.

PHIBALAPTERYX VIRGATA, Curtis, Brit. Ent., pl. 623, is stated by that author to be possibly a variety of Ph. lineolata, differing in having the fascia broader and nearly of equal breadth; the third striga terminated by the spot, and the fourth and fifth incurved at the costa and not straight. The specimens were taken in Norfolk.

SPECIES 6.—PHIBALAPTERYX ANGUSTATA[a].—(Plate LXVI., Fig. 13.)—Measures 11 lines in expanse; fore wings reddish-brown or grey-brown, scarcely clouded, with an obsoletely-crenated narrow fascia in the middle, thickened towards the costa, and with a black dot having a white iris; hind wings greyish-brown. Taken at the end of September, in the neighbourhood of London. Possibly an imported species, as it is stated by Mr. Haworth that it also occurs in Georgia, in North America.

[a] SYNONYME.—*Phalæna angustata*, Haworth; Stephens; Wood, fig. 616.

LOZOGRAMMA, STEPHENS. ASPILATES, PARS TREITSCHKE.

The palpi are very short and bent upwards, but scarcely extending beyond the forehead; the antennæ simple in both sexes, slightly pubescent in the males; the abdomen of moderate length, tufted at the apex in the males; fore wings large and triangular, with slight oblique strigæ; and the hind tibiæ in the males thickened, and producing a bunch of hairs on the inside. When at rest, the wings are placed triangularly, whereas in the types of the preceding genus they are extended horizontally.

SPECIES 1.—LOZOGRAMMA PETRARIA[b].—(Plate LXVI., Fig. 14.)—Measures about $1\frac{1}{4}$ inch in expanse; fore wings pale brownish-buff, with two slender, oblique, straight, brown strigæ, one before and the other beyond the middle of the wing, the latter edged with a pale stripe, beyond which is another pale straight striga, slightly indicated; a black dot in the middle of the wings towards the costa; hind wings with a slightly-indicated striga, arising from the anal margin. Taken about the beginning of June, and again in August, in places where fern abounds in plenty.

[b] *Geometra petraria*, Hübner; Haworth; Stephens; Wood, fig. 617.
Phalæna chlorosata, Scopoli.
Geometra virgaria, Borkhausen.

SCOTOSIA, STEPHENS. ACIDALIA, p. TREITSCHKE. LARENTIA, p. BDV.

This genus has the antennæ simple in both sexes; the palpi long, and porrected into a beak; the abdomen long and tufted in the males; the fore wings narrow, indistinctly or obliquely strigose, the margins of all the wings being crenated. The caterpillars are slender, not tuberculated, and marked with longitudinal stripes.

SPECIES 1.—SCOTOSIA VETULATA[c].—(Plate LXV., Figs. 15, 16.)—Varies from 1½ to 1⅔ inch in expanse; wings dull brown, with various darker strigæ, almost obsolete, running across all of them, chiefly indicated by dots on the veins, and with a darker central fascia, and a dark dot in the middle of the wing towards the costa. The caterpillar is dark brown, with white stripes down the base, and yellow marks at the sides; it feeds on the buckthorn, and the moth appears at the end of June, in woods or chalky districts. Not very common.

[c] SYNONYME.—*Geometra vetulata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 619.

SPECIES 2.—SCOTOSIA SPARSARIA[d].—(Plate LXVI., Fig. 17.)—Measures 1 inch in expanse, and has the wings brown, with almost obsolete dusky and whitish strigæ running across all the wings, and with numerous black dots disposed over the fore wings, especially towards the costa, and in rows parallel with the apical margin; a more distinct spot in the middle of the wing towards the costa. Taken in the New Forest, towards the end of June.

[d] SYNONYMES.—*Geometra sparsaria*, Hübner; Stephens; Wood, fig. 620.
Geometra roraria, Esper.

SPECIES 3.—SCOTOSIA RHAMNATA[e].—(Plate LXVI., Fig. 18.)—Measures from 1½ to 1⅔ inch in expanse; wings chestnut-brown, very much marked with undulated dusky strigæ, a broad dark brown bar, edged with a paler streak, and very much dentated on the outside, running across the middle of the fore wings, bearing several slender strigæ and a black dot; an undulated pale line runs nearly parallel with the apical margin; hind wings with darker and paler strigæ beyond the middle, continuous with those of the fore wings. The caterpillar is green, with a brown line down the back, and the edges of the segments yellow; it feeds on the buckthorn, and the moth appears at the end of May. Found in woods, but not a common species.

[e] SYNONYMES.—*Geometra rhamnata*, Wien, Verz.; Hübner; Haworth; Stephens; Wood, fig. 618.
Phalæna transversata, Hufnagle.

DESCRIPTION OF PLATE LXVII.

INSECTS.—Fig. 1. Triphosa cervinata (the scarce tissue).
„ Fig. 2. Triphosa dubitata (the common tissue).
„ Fig. 3. Triphosa cinereata (the ashy tissue).
„ Fig. 4. Camptogramma bilineata (the yellow shell).
„ Fig. 5. Eucosmia undulata (the scollop shell).
„ Fig. 6. Charissa obscuraria (the dark annulet). 7. The Caterpillar.
„ Fig. 8. Charissa dilucidaria (the pale annulet).
„ Fig. 9. Charissa pullata (the brown annulet).
„ Fig. 10. Charissa serotinaria (the large Mocha).
INSECTS.—Fig. 11. Charissa operaria (the Scotch annulet).
„ Fig. 12. Pachycnemia hippocastanaria (the chestnut carpet).
„ Fig. 13. Chæsias spartiata (the streak).
14. The Caterpillar.
„ Fig. 15. Chæsias obliquaria (the chevron).

All the insects in this plate are from specimens in the cabinet of Mr. Bentley; the caterpillars are from Hübner. The caterpillar of Spartiata varies very much in colour, from reddish-brown to green, but the markings remain the same. H. N. H.

TRIPHOSA, STEPHENS. LARENTIA, p. BDV.

The antennæ are simple in both sexes; the palpi are porrected into a short stout beak; the wings broad and very strigose, the strigæ forming dentated fasciæ across the middle of the wings, all of which are sinuated or toothed along the apical margin, and the disk glossy. The caterpillars are rather robust, with pale longitudinal stripes.

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SPECIES 1.—TRIPHOSA CERVINATA[f].—(Plate LXVII., Fig. 1.)—Measures about 1¾ inch in expanse; wings greyish-brown, more or less pale, with some strigæ or nearly obsolete fasciolæ towards the base, followed by two deep brown narrow fasciæ across the middle of the wing, the outer one having the outer edge deeply bidentate; a black dot towards the costa is placed between these strigæ, which are indeed sometimes almost confluent; there is also a slightly-defined, undulated, pale line, parallel with the apical margin; hind wings slightly strigose, the strigæ corresponding with those of the fore wings. The caterpillar is greyish, with pale stripes on the sides, the under side spotted with green, and the head brown. It feeds on the barberry, and the moth appears in April, frequenting gardens; it is, however, a rare species.

[f] SYNONYMES.—*Geometra cervinata*, Hübner; Haworth; Stephens; Wood, fig. 621.
Acidalia ancipitata, Treitschke.
Geometra certata, Hübner (Verz.); Treitschke; Duponchel.
Larentia certaria, Bdv.

SPECIES 2.—TRIPHOSA DUBITATA[g].—(Plate LXVII., Fig. 2.)—Measures about 1¾ inch in expanse. Very like the preceding, but the fore wings are very shining, and have a rich purplish tinge; the strigæ nearly arranged as in the former species, the two central fasciæ together forming a broad unsolid bar, having a sharp angle towards the costa on the outer edge, and having its hinder portion broader than in the preceding; the cilia of all the wings purplish, preceded by a black line. The caterpillar is green, with brown and pale lines and streaks, and a yellow line on each side. It feeds on the buckthorn; and the moth appears in May, and again in August, frequenting gardens and woods, and is rather a common and widely-dispersed species.

[g] SYNONYMES.—*Phalæna Geometra dubitata*, Linnæus; Donovan, 7, pl. 246, f. 2; Haworth; Stephens; Wood, fig. 622.
Phalæna fuliginata, Hufnagle.

SPECIES 3.—TRIPHOSA CINEREATA[h].—(Plate LXVII., Fig. 3.)—Measures from 1⅓ to 1½ inch in expanse; wings pale ashy, without any purple tinge; the fore ones with a narrow brown bar at the base, and two slender ones in the middle, forming a broad fascia, on the anterior margin of which is a black line, and towards the apical margin an obscure whitish striga, and on the margin itself a slender dusky line; hind wings pale ashy and unspotted, and not strigose. Taken at Ripley, in July.

[h] SYNONYME.—*Triphosa cinereata*, Stephens, Illustr. H., 3, p. 263; Wood, fig. 623.

CAMPTOGRAMMA, STEPHENS. ACIDALIA, P. TREITSCHKE. LARENTIA, P. BDV.

The insect upon which Mr. Stephens has proposed the present genus is very closely allied to the last, having, like it, the apical margin of the wings waved, and the disk very strigose; the antennæ simple in both sexes, and the wings placed in a triangle during repose; but its palpi are rather long, porrected upwards into an acute beak-like projection; and its wings are destitute of gloss, and of a yellow colour. The caterpillar is slender, not tuberculated, and with obscure spots and streaks.

SPECIES 1.—CAMPTOGRAMMA BILINEATA[i].—(Plate LXVII., Fig. 1.)—Measures from 1 to 1⅓ inch in expanse; wings yellow; hind ones more orange; all traversed by very numerous, slender, darker and lighter strigæ, two of which, of a white colour and very much scalloped, are placed before and beyond the middle of the wing, the space between them forming a broad bar, generally darker coloured on the sides. The caterpillar is greenish, with faint whitish streaks, which are sometimes wanting; it feeds on Lychnis dioica. This is one of our commonest carpet moths, occurring in hedges and woods at the end of June, and nearly through the summer.

[i] SYNONYME.—*Phalæna Geometra bilineata*, Linnæus; Donovan, 8, pl. 287, fig. 3; Haworth; Stephens; Wood, fig. 624.

EUCOSMIA, Stephens. LARENTIA, p. Bdv.

The insect upon which this genus is established agrees with the two preceding in the denticulated margin of the wings, especially the hind pair; the palpi are not, however, porrected like a beak, and the hind wings of the males are furnished with a fascicle of hair-like scales on the inner margin; the wings are pale above, with very numerous slender waved strigæ.

Species 1.—Eucosmia undulata [j].—(Plate LXVII., Fig. 5.)—Measures about 1½ inch in expanse; wings of a greyish-ash colour, with about 16 slender waved dusky strigæ, and a dark spot in the ordinary position; a more distinct and undulated whitish striga near the apical margin; and the two strigæ towards the middle of the wing forming a chain-like series of marks. The perfect insect is found in woods at the end of June, but it is not a common insect.

[j] Synonymes.—*Phalæna Geom. undulata*, Linnæus; Harris, Expos., pl. 11, figs. 5, 6; Donovan, x., pl. 342, fig. 3; Stephens; Wood, fig. 625.
Phalæna serrata, Hufnagle.

CHARISSA, Curtis. GNOPHOS, Boisduval.

The antennæ of the males have the joints compressed and produced internally; the palpi are very short, and nearly straight, not produced into a beak; the abdomen is long and slender; the wings have the apical margins, especially in the hind pair, indented, and they are all marked with an orbicular stigma; the hind tibiæ are subclavate in the males of some of the species. The caterpillars are rather short, varied in their colours, and with a bifid tail.

Species 1.—Charissa obscuraria [k].—(Plate LXVII., Figs. 6, 7.)—Measures about 1⅓ inch in expanse; and has the wings of an ashy-black colour, and very pulverose, with a curved dark striga towards the base of the fore wings; a black ocellus towards the middle of all the wings, beyond which is a black dentated striga; and the apical margin is marked with a slender dentated black line. The caterpillar is of violet-brown on the back, marked with pale spots and lines. It feeds on the dewberry; and the moth appears in July, occurring in some plenty in the New Forest and adjacent counties.

[k] Synonymes.—*Geometra obscuraria*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 626. | *Phalæna lividata*, Fabricius. *Geometra anthracinaria*, Esper.

Species 2.—Charissa dilucidaria [l].—(Plate LXVII., Fig. 8.)—This species is about 1⅓ inch in expanse, and closely allied to the preceding, but has the wings of a browner colour, irrorated with dark brown scales; the fore wings with two crenated strigæ (between which is an ocellus), the outer of which is not placed so backwards as in the preceding species; hind wings with the dentated striga close to the ocellus; cilia grey, spotted with black. Taken in July, in Devonshire.

[l] Synonyme.—*Geometra dilucidaria*, Wien. Verz.; Hübner (not of Esper); Stephens; Wood, fig. 627.

Species 3.—Charissa pullata [m].—(Plate LXVII., Fig. 9.)—Measures 1¼ or 1⅓ inch in expanse; wing pale ashy, much irrorated, with a denticulated striga before the middle of the fore wings, and another similar common to all the wings; at some distance before which is a black ring, with a pale centre, a subapical slightly-clouded undulation, and an interrupted marginal black line on all the wings. Taken in different places on the south coast of England, in some profusion, in August. I have taken it in the Isle of Wight, and Mr. Haworth mentions Wales as its habitat.

[m] Synonyme.—*Geometra pullata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 628. | *Phalæna Geometra quadripustulata*, Donovan, 13, pl. 463. *Geometra dilucidaria*, Esper (not of Hubner).

SPECIES 4.—CHARISSA SEROTINARIA [n].—(Plate LXVII., Fig. 10.)—Measures 1⅓ inch in expanse; wings whitish-buff, or yellowish, irrorated with brown atoms; fore wings with an incurved and waved, dark, slender striga towards the base; all the wings with a black ring-like mark in the middle, followed by a slender dentated striga, running across all the wings; apical margin clouded, and bearing a whitish striga and a marginal row of black dots. Very rare; found in Sussex.

[n] SYNONYME.—*Geometra serotinaria*, Hübner; Haworth; Stephens; Wood, fig. 629.

SPECIES 5.—CHARISSA OPERARIA [o].—(Plate LXVII., Fig. 11.)—Measures about 1⅓ inch in expanse; dull grey, varied and tinged with pale ochre, glossy; "fore wings irregularly varied with white scales; an obscure, transverse, curved fascia towards the base, another beyond the middle, parallel to the posterior margin, sinuated, and a pale indented one near to the same margin;" a black spot in the middle of the wing, towards the costa, and the apical margin with minute black spots; hind wings with a sinuated obscure fascia near the centre preceded by a black dot, and with a submarginal pale striga. Taken in the Islands of Arran and Bute, and at Flisk, in Scotland, about the end of July.

[o] SYNONYME.—*Geometra operaria*, Hübner; Curtis, Brit. Ent., pl. 105; Stephens; Wood, fig. 630.

PACHYCNEMIA, STEPHENS; CURTIS. STHANELIA, BOISDUVAL.

This genus differs from those immediately preceding in having the wings elongate-ovate, and with the apical margins entire; the palpi are porrected into a short straight beak; the antennæ are slightly thickened and serrated in the males, and simple in the females; the abdomen is slender and rather long; the posterior tibiæ are dilated, and furnished with a pencil of hairs.

SPECIES 1.—PACHYCNEMIA HIPPOCASTANARIA [p].—(Plate LXVII., Fig. 12.)—Measures 1¼ inch in expanse; fore wings reddish-grey, with a broad brown fascia across the middle, narrowed behind; the outer edge much crenated and curved, and followed by a pale whitish edge; a dark dot in the middle, followed by a sinuated striga. Taken from March to September, on heaths, in various parts of the country, especially in the New Forest, in July.

[p] SYNONYMES.—*Geometra hippocastanaria*, Hübner; Curtis, Brit. Ent., pl. 611; Stephens; Wood, fig. 631. | *Phalæna (?) anomalata*, Haworth in Ent. Trans. O. S. *Geometra degenerata*, Hübner.

CHESIAS, TREITSCHKE; STEPHENS; BOISDUVAL.

The palpi are long, porrected into a beak, and very scaly; the antennæ simple in both sexes; the joints in the males being very slightly produced; the abdomen long, and rather stout; the tibiæ in all the feet slender; the wings long, glossy, narrow, and ovate-lanceolate, with entire margins; when at rest, they are laid like the roof of a house. The caterpillars are long, slender, naked, and not tubercular.

SPECIES 1.—CHESIAS SPARTIATA [q].—(Plate LXVII., Figs. 13, 14.)—Varies from 1¼ to 1⅓ inch in expanse; wings grey; the fore ones variously clouded with brown, with a white streak extending from the base to the tip, at a short distance from the costa; three oval obliquely-tranverse and nearly obsolete spots in the fore wings; the first large and placed on the costa, the second in the middle, and the third on the hinder margin, nearer the base than the rest; a dark striga, edged with whitish, runs nearly parallel to the apical margin; hind

wings brown and unspotted. The caterpillar is greenish or yellowish, with white longitudinal streaks. It feeds on the common broom; and the moth appears in October, in places where broom abounds.

[q] SYNONYME.—*Phalæna spartiata*, Fabricius; Fuessly, Arch., pl. 11; Donovan, 10, pl. 342, fig. 2; Haworth; Stephens; Wood, fig. 632.

SPECIES 2.—CHESIAS OBLIQUARIA[r].—(Plate LXVII., Fig. 15.)—Measures about 1¼ inch in expanse; wings greyish-brown; near the base of the fore wings is a slender, rectangular, dusky striga, followed by a clouded space and a dark brown oblique bar across the middle of the wing, darkest on the costa, beyond which the wings are reddish; the costa darkest; an oblique dark line arises from the apex of the wing, and dilates into a dusky submarginal cloud, followed by a crenated whitish striga; the principal veins of the wings are marked with interrupted black lines, and an interrupted black line along the apical margin; hind wings pale brown and unspotted. Taken in May, near places in the neighbourhood of woods where broom abounds, but not a common species.

[r] SYNONYMES.—*Geometra obliquaria*, Wien. Verz.; Treitschke; Stephens; Wood, fig. 633.

Phalæna bombycata, Hübner (Beitr.); Donovan, 11, pl. 386, fig. 4.
Phalæna rufata, Haworth; Stewart.

DESCRIPTION OF PLATE LXVIII.

INSECTS.—Fig. 1. Thera simulata (the brick carpet).
„ Fig. 2. Thera variata (the grey carpet).
„ Fig. 3. Thera juniperata (the Juniper carpet).
4. The Caterpillar.
„ Fig. 5. Thera coniferata (the Northern carpet).
6. The Caterpillar.
„ Fig. 7. Oporabia dilutata (the November moth).
8. A pale variety.
„ Fig. 9. Oporabia polata (the polar carpet).
„ Fig. 10. Cheimatobia brumata (the winter moth).
„ Fig. 11. Cheimatobia rupicapraria (the early moth).
„ Fig. 12. Anisopteryx æscularia (ante p. 6), copied by mistake from Hübner for Lobophora polycommata.
„ Fig. 14. Lobophora lobulata (the early tooth-striped).
15. The Caterpillar.
„ Fig. 16. Lobophora rupestrata (the double lined).
INSECTS.—Fig. 17. Lobophora polycommata (the spring carpet).
13. The Caterpillar.
„ Fig. 18. Lobophora hexapterata (the prominent).
„ Fig. 19. Lobophora sexalisata (the small seraphim).
20. The Caterpillar.
PLANT.—Fig. 21. Juniperus communis (the common juniper).

All the insects in this plate are from the cabinet of Mr. Bentley, with the exception of L. polycommata (No. 17), from a continental specimen in the British Museum, and copied (fig. 12) from Hübner by mistake for L. polycommata. The two species of Lobophora hexapterata and sexalisata, which have the rudiments of two additional wings most strongly developed, have been drawn from specimens in which those singular appendages were not so perfect as in specimens I have since seen. L. viretata has been omitted by accident, and will be given in a supplemental plate at the end of the present volume. The caterpillars are from Hübner.

H. N. H.

THERA, STEPHENS; CURTIS. CIDARIA, P. BOISDUVAL.

The palpi in this genus are porrected into an obtuse very scaly beak; the antennæ are simple in both sexes, except in the first species, T. simulata, in which they are slightly bipectinated in the males; the abdomen is rather long and tufted in the males; the fore wings are somewhat triangular, and the hind ones ovate, with the edges entire; the disk marked with a dark, broad, central fascia; the hind wings are not lobed at the base. The caterpillars are long, smooth, and cylindrical, and feed upon fir or juniper trees.

SPECIES 1.—THERA SIMULATA[s].—(Plate LXVIII., Fig. 1.)—Measures 1⅛ inch in expanse; the fore wings are reddish-grey, with a reddish patch at the base, bordered by a brown angulated striga; the middle fascia broad reddish-brown, edged on each side by a dark streak; towards the base it is deeply angulated, and the outer margin curved, beyond which the wing is darker, bearing an indistinct, whitish, subapical, waved striga; hind wings very pale reddish-brown. Taken in or near fir plantations in Kent, Wiltshire, and at Flisk, in Scotland, in June, and again in September.

[s] SYNONYME.—*Geometra simulata*, Hübner; Stephens; Wood, fig. 634.

SPECIES 2.—THERA VARIATA[t].—(Plate LXVIII., Fig. 2.)—Varies from 10 to 14 lines in expanse; wings pale greyish, with a fulvous-brown, reddish or pitchy-coloured patch at the base, the outer edge of which is dentated; a fascia of the same colour, much angulated and narrowed, and sometimes interrupted towards the hind margin, crosses the middle of the wing, bearing a small dark dot in the middle towards the costa; the outer margins of the fascia are edged with a pale streak, beyond which the wing is darker grey, with a slender, subapical, waved, pale striga; the hind wings unspotted. The caterpillar is green, with white lines on the back and sides, the latter edged with yellow. It feeds on different species of fir trees; and the moth appears in June or July, and again in September, when it is very abundant in fir plantations, and is widely dispersed.

[t] SYNONYME.—*Geometra variata*, Wien. Verz.; Hübner; Hatchett, in Trans. Ent. Soc. O. S., pl. 7, fig. 1; Haworth; Stephens; Wood, fig. 635.

THERA FULVATA (Fabricius; Stephens; Wood, Fig. 636; G. obeliscata, Hübner) is regarded as a probable variety of the preceding. It has the fore wings ashy-grey, with a central, sinuated, reddish fascia, in which is a black dot; the apical portion of the wing clouded with brown, and with an obsolete, whitish, subapical striga. Taken in the midland and northern counties, in June and September.

SPECIES 3.—THERA JUNIPERATA[u].—(Plate LXVIII., Figs. 3, 4.—Measures about 1 inch in expanse of the fore wings, which are pale ashy; the fore ones elongate-ovate, with a darker greyish-ashy patch at the base, edged with a bidentated blackish striga; a broad fascia of dark grey runs across the middle of the wing, bearing a black dot towards the costa; the inner edge of this fascia is deeply indented, whilst the outer one is very much angulated towards the costa, and deeply waved behind, where it is much narrowed; beyond this the wing is slightly clouded with grey, and bears a slightly visible, dark, oblique line towards the apex; hind wings very pale grey, with a slight striga across the middle. The caterpillar is green, with whitish and reddish lines, the latter above the feet. It feeds on the common juniper, and the moth frequents the bushes of that tree, about which, on Box-hill and at Mickleham, Surrey, it was taken in some abundance at the middle of last October, by Mr. Bedell, with the help of a lamp, not making its appearance on the wing before the termination of twilight.

[u] SYNONYME.—*Phalæna Geometra juniperata*, Linnæus; Hübner; Stephens, Illust. H., 3, pl. 31, fig. 2; Wood, fig. 638.

SPECIES 4.—THERA CONIFERATA[v].—(Plate LXVIII., Figs. 5, 6.)—Varies from 1 to 1¼ inch in expanse; fore wings brown, with a reddish tinge; the base darker, terminated by a black, slender, incurved striga, edged on the outside with white; across the middle of the wing is a dark brown fascia, edged with blackish, and bordered with white; the inner margin is curved inwards, the outer one with a deep lobe towards the costa, the hinder part being much narrowed; the disk with a black subocellated dot, and with slight indications of undulated lines; near the apical margin is a dentated pale striga, having several short black dashes on its outside towards the apex; the edge with small black dots arranged in pairs; hind wings pale whitish. Taken at Castle Eden Dene, Durham, in June, by G. Wailes, Esq. The caterpillar is slightly hairy, and dark green with white lines, and paler beneath.

[v] SYNONYME.—*Thera coniferata*, Curtis, Brit. Ent., pl. 519; Stephens, Ill., 4, 392; Wood, fig. 637.

OPORABIA, STEPHENS. LARENTIA, P. BDV.

These insects have the palpi very minute and not porrected; the antennæ of the males have the joints slightly produced within, and finely setose; the abdomen is very short; the wings ample, thin, and of obscure colours, with more or less indistinct waved marks, and with the margins entire and rounded, and disposed in repose in a

triangle; the cilia long and hair-like, and the postcostal vein of the fore wings dilated at the base*; the caterpillars smooth, naked, and marked with lines, and the period of flight is at the end of the autumn.

SPECIES 1.—OPORABIA DILUTATA[w].—(Plate LXVIII., Figs. 7, 8.)—Varies from 1⅛ to rather more than 1½ inch in expanse. This is an extremely variable species, its ordinary full-marked state being represented in our figure 7, in which the fore wings are pale grey, with numerous darker undulated strigæ, arranged at equal distances apart, in pairs or threes, and which are especially indicated by black dots upon the veins; these groups of strigæ in some specimens form darker fasciæ, whilst in others they exist without the ground upon which they are placed being darker coloured, so that they do not form the fasciæ; others have the fore wings almost suffused, and of an uniform dark greyish, shining hue, whilst some have the strigæ only at the apical portion of the wings (Ph. fimbriata, Haw.), and some are whitish with dark markings, as in our figure 8; the hind wings are paler and strigose, the strigæ modified as in the fore wings of the different varieties. The caterpillar is dirty green spotted with reddish, and with a yellow line at the sides. It feeds on the oak, elm, and other forest-trees; and the moth appears in October and November, and is very common.

[w] SYNONYMES.—*Geometra dilutata*, Wien. Verz.; Hübner; Albin, plate 45, fig. 74, a—c; Harris, Exposition, pl. 8, fig. 3; Haworth; Stephens; Wood, fig. 639.
Geometra quadrifasciaria, Borkhausen.
Geomctra affiniata, Borkhausen.
Phalæna inscriptata, Donovan, 15, pl. 517.
Geometra fimbriata, Haworth (variety).

SPECIES 2.—OPORABIA POLATA[x].—(Plate LXVIII., Fig. 9.)—Measures 1⅛ inch in expanse of the fore wings, which are pale brownish-grey, with a darker patch at the base, bounded by a rectangular, slender, dark striga, beyond which is a darker brownish fascia before, and another beyond the middle of the wings, which is pale, with a small blackish lunule at the extremity of the discoidal cell; the edges of these bars marked on the costa with darker patches, and with dots on the veins; the apical portions of the wings dark, with a pale, undulating, submarginal line, and with dark dots on the veins; the hind wings pale, with a dark striga beyond the middle, and a dusky border. Taken in the Isle of Arran, and also on walls at Staleybridge, near Manchester, by MR. EDLESTON.

[x] SYNONYME.—*Larentia polata*, Boisduval; Duponchel.

CHEIMATOBIA, STEPHENS. LARENTIA, P., & HIBERNIA, P. BOISDUVAL.

We have here a group of insects allied in some respects to the Oporabiæ and Lobophoræ, whilst in their subapterous females and hyemal period of flight they approach the Hiberniæ, with which they are united by Mr. Curtis, whilst Boisduval places one of the species with Oporabia dilutata in his genus Larentia, and the other with his Hiberniæ. The palpi are very minute, as in the last genus. The antennæ in the type (C. brumata) are simply ciliated in the males, the joints being produced on the inside, whereas they are bipectinated in C. rupicapraria. The wings of the males are large, thin, and rounded, of obscure colours, and slightly undulated; those of the females are very small; the abdomen of the males is short and slender, and the caterpillars are slender, naked, and lineated. The moths appear in mid-winter.

SPECIES 1.—CHEIMATOBIA BRUMATA[y].—(Plate LXVIII., Fig. 10.)—The male measures from 1 to 1⅛ inch in expanse, and has the wings ashy-brown, with numerous, very nearly obsolete, undulated strigæ, some of which are occasionally confluent, and form a slight fascia across the middle of the wing; the veins are dotted with blackish, indicating the situation of the strigæ when these become obsolete. The apical margin is dusky, and the hind wings are pale and scarcely strigose. The female is brown, with very short rudiments of wings. The

* This character is not, as might be conjectured, a sexual one, since it exists, as I have ascertained, in both sexes; it occurs also in some of the Lobophoræ, and in Larentia (?) multistrigaria, thus confirming the relations of these insects pointed out at p. 31.

caterpillar is pale green, with pale lines at the sides. It feeds on various trees in gardens in the spring, and is very destructive to the crops of fruit, by devouring the young blossom buds. Kollar* has given a very long and most interesting account of its habits, and has suggested a plan for its destruction, which appears both ingenious and practicable. The moth appears in November, December, and January, and is very common.

[y] Synonymes.—*Phalæna Geometra brumata*, Linnæus; Hubner; Haworth; Curtis; Stephens, Ill.; Wood, fig. 640, male and female. | *Cheimatobia vulgaris*, Stephens, Cat.; Haworth, olim. *Phalæna hyemata*, Hufnagle.

Species 2.—Cheimatobia rupicapraria[z].—(Plate LXVIII., Fig. 11.)—The male measures from 13 to 15 lines in expanse of the fore wings, which are greyish-brown, with a broad dark bar across the middle, the edges being darkest and subcrenated, narrowed behind, and bearing a dark dot in the middle. The hind wings whitish, with the ordinary central dark dot preceding a nearly evanescent striga; the edges with brown spots; the antennæ in the males are bipectinated. The female has short, rudimental, whitish-ashy wings, with a dark bar towards the apex, and a slender striga across the hind ones. The caterpillar is greenish, with whitish lines and margins to the segments; it feeds on the wild plum, and the moths appear in January and February, the males flying about hedgerows; it is a rather common insect.

[z] Synonymes.—*Geometra rupicapraria*, Wien. Verz.; Hubner; Stephens; Wood, fig. 641, a and n. *Geometra primaria*, Haworth; Samouelle.

LOBOPHORA, Stephens; Curtis; Bdv. AMATHIA, Duponchel.

The palpi in this interesting group are short, and bent upwards in front of the face; the antennæ are setaceous, with short hairs scattered over the joints; the abdomen slender; the fore wings entire, spread horizontally when at rest, and marked with undulated lines; and the hind ones furnished at the base in the males with a short lobe or winglet, variable in size, the species in which it is the smallest being only armed with a pair of spurs to the hind pair of tibiæ. The caterpillars feed on trees; they are smooth, with the head flat, and last segment bifid.

SECTION A.—*Hind wings of the males with a small lobe. Hind tibiæ with one pair of spurs.*

Species 1.—Lobophora polycommata[a].—(Plate LXVIII., Fig. 13 (the caterpillar) and 17.)—Measures nearly 1½ inch in expanse of the fore wings, which are pale greyish-brown, with irregular waved strigæ, of a darker colour, several of which, near the base of the wings, are united by a dark dash towards the hind margin, a broad bar of dark chestnut-brown across the centre, bearing a pale patch on the costa, and varied by the dark longitudinal strigæ on the veins; the outer margin towards the costa is deeply angulated; beyond this is a subapical fascia, angulated towards the costa, and formed of pale streaks; the veins black, as they are also at the apical margin, each bearing two black dots. Hind wings pale, with two slender indented strigæ and marginal black dots. Taken near Dartford, in Kent, in April, but very rare. The caterpillar is green, with a yellowish line on each side, and a duller-coloured back; it feeds on the honeysuckle.

Obs.—I have omitted to refer to fig 12, which is a copy of Hübner's figure of Anisopteryx æscularia, drawn by Mr. Humphreys in mistake for a variety of this species.

[a] Synonyme.—*Geometra polycommata*, Wien. Verz.; Hübner; Curtis, Brit. Ent., pl. 81; Stephens; Wood, fig. 642.

Species 2.—Lobophora lobulata[b].—(Plate LXVIII., Figs. 14, 15.)—Measures about 1¼ inch in expanse of the fore wings, which are whitish-grey, with about five, very obsolete, undulated, brownish strigæ, of which

* See Miss Loudon's translation, published by the publisher of this work.

the outermost has the inner edge dentate; they are most conspicuous towards the costa; the veins are dotted with black; a row of black dots arranged in pairs along the apical margin; hind wings paler, with indications of slight strigæ, and a dusky dot in the middle; the margin with an interrupted black line. Caterpillar green, with a yellow line on each side. It feeds on the honeysuckle, and the moth appears in April (June, according to Stephens).

LOBOPHORA COSTÆSTRIGATA, Haworth, Curtis, Stephens, Wood, fig. 644, is regarded by Mr. Stephens as being probably the female of the last-described insect, measuring 1⅓ inch in expanse, with the wings ashy-white, with about five abbreviated, geminated, equidistant strigæ, chiefly on the costa, which are occasionally nearly obsolete, and sometimes reach nearly to the hinder margin. Taken near Westerham, in Kent, in July.

[b] SYNONYMES.—*Geometra lobulata*, Hübner; Treitschke; Curtis.
Phalæna dentistrigata, Haworth; Stephens; Wood, fig. 643.

SPECIES 3.—LOBOPHORA VIRETATA[c].—Measures 13 lines in expanse of the fore wings, which are greenish, fading to yellowish, with black clouds and fasciolæ, barred with yellow and black equidistant strigæ, formed of clouds and dots of black, and with a row of geminated black dots on the margin; cilia ashy and brown; hind wings ashy, unspotted. The caterpillar is greenish-yellow, spotted with reddish-brown on the back. It feeds on the privet; and the moth appears in June, occurring in the woods of Kent, Norfolk, and Essex.

[c] SYNONYME.—*Geometra viretata*, Hübner; Haworth; Stephens; Wood, fig. 646.
[a] *Phalæna trinotata*, Donovan, xiv., pl. 499, fig. 11.

SPECIES 4.—LOBOPHORA RUPESTRATA[d].—(Plate LXVIII., Fig. 16.)—Measures 1⅓ inch in expanse; fore wings white, with five waved brown strigæ, the first angulated near the base of the wings, the fourth irregularly lobed beyond the middle, and the fifth subapical, sinuated within; the apical margin slightly ashy, with a geminated row of black dots; hind wings with two deep brown waved strigæ beyond the middle, and a marginal streak of the same colour. Taken in Devonshire, in June, but very rare.

[d] SYNONYME.—*Geometra rupestrata*, Wien. Verz.; Fabricius; Hubner; Treitschke; Stephens; Wood, fig. 645.

SECTION B.—*Hind wings of the males small, with large lobes. Hind tibiæ with two pairs of spurs.*

SPECIES 5.—LOBOPHORA HEXAPTERATA[e].—(Plate LXVIII., Fig. 18.)—Measures from 13 to 15 lines in expanse of the fore wings, which are ashy-brown, with the base and a broad solid fascia beyond the middle, of dark brown; the middle of the wings paler, with irrorations or pale strigæ most evident on the costa, and with the apical margin irregularly brown. These lines and markings, however, are very variable, those on the centre of the wing being sometimes evanescent, in others they are completely atomose; hind wings white, with more or less distinct strigæ towards the margin. Female destitute of the winglet. Taken in Kent, and various other widely-distant places, in June.

[e] SYNONYMES.—*Phalæna hexapterata*, Fabricius; Donovan, 6, pl., 192; Haworth; Stephens; Wood, fig. 647.
Phalæna halterata, Hufnagle.

SPECIES 6.—LOBOPHORA SEXALISATA[f].—(Plate LXVIII., Figs. 19, 20.)—Measures from 9 to 11 lines in expanse of the fore wings, which are ashy-brown, with the base and three undulated strigæ, the basal one before the middle of the wing, beyond a broad striga, the second brownish and broad; in the middle of which, towards the costa, is a black subocellated spot; the third forms a brownish fimbria, in which is a whitish undulated striga; hind wings darker coloured than in the last species, with a darker subapical striga and fimbria. The caterpillar is pale green, with a yellow line on each side, above which is a white one; it feeds on sallow, and the moth appears in June and August. Taken in the woods of Surrey and Hampshire, but rare.

[f] SYNONYMES.—*Geometra sexalisata*, Hubner; Haworth; Stephens; Wood, fig. 648.
Geometra sexalata, Borkhausen.

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DESCRIPTION OF PLATE LXIX.

INSECTS.—Fig. 1. Eupithecia Linariata (the beautiful pug).
2. The Caterpillar.
„ Fig. 3. Eupithecia pulchellata (the pretty pug).
„ Fig. 4. Eupithecia rectangulata (the green pug).
„ Fig. 5. Eupithecia nigro-punctata (the little pug).
„ Fig. 6. Eupithecia nigro-sericeata (the black silk pug).
„ Fig. 7. Eupithecia coronata (the V pug).
„ Fig. 8. Eupithecia strobilata (the double-striped pug)
„ Fig. 9. Eupithecia rufifasciata (the red-barred pug).
„ Fig. 10. Eupithecia lævigata (the juniper pug).
„ Fig. 11. Eupithecia exiguata (the barberry pug).
„ Fig. 12. Eupithecia abbreviata (the short pug).

INSECTS.—Fig. 13. Eupithecia nebulata (the brindled pug).
„ Fig. 14. Eupithecia albipunctata (the speckled pug).
„ Fig. 15. Eupithecia subumbrata (the small brindled pug).
„ Fig. 16. Eupithecia subfasciata (the subfasciated pug).
„ Fig. 17. Eupithecia vulgata (the common pug).
„ Fig. 18. Eupithecia irriguata (the Welsh pug).

PLANT.—Fig. 19. Linaria vulgaris (common toadflax).

The insects in this plate are from the cabinet of Mr. Bentley, with the exception of L. abbreviata, L. subfasciata, L. irriguata, and L. vulgata, from the collection of J. F. Stephens, Esq. The caterpillar is from Hübner. H. N. H.

EUPITHECIA, CURTIS. LARENTIA, PARS TREITSCHKE.

These small insects are well distinguished by their long narrow fore wings, extended horizontally in repose, and marked with numerous undulated strigæ, and by the smallness of the hind wings (resembling the typical Lobophoræ in this respect). The antennæ are alike in both sexes; the palpi porrected like a beak; the tibiæ of the fore feet very short, and the tarsi long and slender. The caterpillars are smooth, cylindrical, slightly elongated. The genus is very numerous.

SPECIES 1.—EUPITHECIA LINARIATA[g].—(Plate LXIX., Figs. 1, 2.)—Measures 9 or 10 lines in the expanse of the fore wings, which are reddish-white, with the base dark; a broad waved ashy fascia in the middle, spotted with black, and margined with white, the apical portion spotted with ashy and black, through which runs a white undulated line; hind wings with numerous ashy strigæ; the subapical one broad, with an undulated whitish line. The caterpillar is yellow or greenish, with dark chestnut spots on the back and sides; it feeds on the flowers of the common toadflax, and the moth appears in the following June. Taken in various parts of Kent, but rare.

[g] SYNONYME.—*Phalæna linariata*, Wien. Verz.; Fabricius; Haworth; Stephens; Curtis, Brit. Ent., pl. 64; Wood, fig. 649.

SPECIES 2.—EUPITHECIA PULCHELLATA[h].—(Plate LXIX., Fig. 3.)—Measures 9 or 10 lines in expanse of the fore wings, which are narrower than in the preceding species, ashy-white, and more thickly clouded and streaked with brown and red, with a broad, central, ashy bar, deeply angulated towards the costa, and bearing a black dot; apical portion of the wings clouded with brown, and bearing a white waved striga; hind wings whitish, with numerous brown strigæ, especially on the anal margin; the base dotted with brown. Taken in the woods of Kent and Surrey, in July, but rare.

[h] SYNONYME.—*Eupithecia pulchellata*, Stephens; Wood, fig. 650.

SPECIES 3.—EUPITHECIA RECTANGULATA[i].—(Plate LXIX., Fig. 4.)—Varies from 8 to 10 lines in expanse of the fore wings, which are very variable in their markings, being generally green, with strigæ and clouds of brown, and with three more distinct, rather square, and somewhat confluent, brown patches on the apical portion of the wing. In some the wings are dark green, with the costa spotted with black, and with brown undulating strigæ; others are green, with the dark strigæ in the middle of the wing, collected into a broad, dentated, waved fascia across all the wings; others are luteous-grey, clouded with brown, and with a broad, brown, central fascia; in others the wings are entirely suffused with black, and in others with brown, with the markings almost obsolete. A very common species in gardens, occurring in the month of June.

[i] SYNONYMES.—*Phalæna Geometra rectangulata*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 651.
Phalæna viridulata, Hufnagle.

SPECIES 4.—EUPITHECIA SUBÆRATA[j].—Measures 8 or 9 lines in expanse of the fore wings, which are green, with a slight, black, angulated striga near the base, a slender one, much bent, before, and another, biangulated, beyond the middle; these strigæ being darkest next the costa; the apical portion with indistinct clouds, through which runs a very obscure, pale waved striga. "This very distinct species" is stated by Mr. Stephens to be very different in form to E. rectangulata, and with the markings dissimilarly placed. Taken in Devonshire, in June.

[j] SYNONYME.—*Eupithecia subærata*, Stephens; (Hübner?); Wood, fig. 652.

SPECIES 5.—EUPITHECIA NIGRO-PUNCTATA[k].—(Plate LXIX., Fig. 5.)—Measures 9 or 10 lines in expanse; wings light greenish, with a central, transverse, undulated striga of black spots, within which, on the fore wing, are six or seven black spots. Very like E. V-ata (coronata), but distinct, being rather larger, and with the striga never continuous, but formed of black dots. Taken at Spitchweek, in Devonshire, in June, by Messrs. Chant and Bentley.

[k] SYNONME.—*Eupithecia nigro-punctata*, Chant (in Ent. Mag., 1, 185); Stephens; Wood, fig. 653.

SPECIES 6.—EUPITHECIA NIGRO-SERICEATA[l].—(Plate LXIX., Fig. 6.)—Measures 9 lines in expanse of the fore wings, which are silky black and shining, with obsolete darker strigæ, and with an undulated whitish one near the apical margin; hind wings rather pale, cilia brown. Very rare. Found near London.

[l] SYNONYMES.—*Phalæna nigro-sericeata*, Haworth; Stephens; Wood, fig. 654.
Geometra inturbata, Hübner (?).

SPECIES 7.—EUPITHECIA SERICEATA[m].—All the wings pale brown, silky, with an undulated striga running across all of them, near the apical margin; cilia whitish. Thus described by Mr. Haworth, from the cabinet of Mr. Latham.

[m] SYNONYMES.—*Phalæna sericeata*, Haworth; Stephens.

SPECIES 8.—EUPITHECIA CORONATA[n].—(Plate LXIX., Fig. 7.)—Measures 9 or 10 lines in expanse, and has the wings green, with indistinct pale, and three more distinct dusky strigæ, the third beyond the middle deeply angulated towards the costa, forming a letter V placed sideways, the tip directed towards the extremity of the wings; the inner part of the strigæ being nearly obliterated; apical margin with an interrupted black line; hind wings paler, with more distinct strigæ. Taken in July, in various places within the metropolitan district.

Obs.—Boisduval gives it as a variety of E. rectangulata.

[n] SYNONYMES.—*Geometra coronata*, Hübner.
Phalæna V-ata, Haworth; Stephens; Wood, fig. 655,

SPECIES 9.—EUPITHECIA STROBILATA[o].—(Plate LXIX., Fig. 8.)—Measures 8 or 9 lines in expanse, and has the wings whitish-grey, varying to reddish, with waved brown strigæ and fasciæ, two of which, running across the middle of all the wings, are more distinct, and appear pectinated, being composed of minute, acute, parallel, fine, transverse lineolæ; besides which they have a subapical, whitish, dentated striga, and a black interrupted marginal line. Taken in fir plantations, in June.

[o] SYNONYMES.—*Geometra strobilata*, Borkhausen; Hübner; Stephens; Wood, fig. 656.
Phalæna bistrigata, Haworth.

SPECIES 10.—EUPITHECIA RUFIFASCIATA[p].—(Plate LXIX., Fig. 9.)—Measures 8 lines in expanse; wings grey and clouded with black, and with two narrow reddish fasciæ, margined with paler colour, the first of which is angulated before, and the second slightly undulated beyond the middle of the wing. The red colour of this fascia soon fades after death. Apical portion of the wing with fuscous clouds and an interrupted marginal line. Taken near London, and in Devonshire, in April.

[p] SYNONYME.—*Phalæna rufifasciata*, Haworth; Stephens; Wood, fig. 657.

SPECIES 11.—EUPITHECIA LÆVIGATA[q].—(Plate LXIX., Fig. 10.)—Measures 9 or 10 lines in expanse; wings ashy-brown, clouded, and streaked with white, brown, and black lineolæ, which are often acute, one or two angulated black strigæ placed before the ordinary central dark dot; which is followed by a pectinated striga, somewhat interrupted, and a whitish, subapical, undulated striga. The caterpillar is rather slender, naked, green, with a darker line down the back, and two white lateral streaks; the sides of the head and terminal segment of the body reddish. It feeds on the common juniper, and the moth appears at the beginning of August. Taken in Norfolk and Kent, but not common.

[q] SYNONYME.—*Phalæna lævigata*, Fabricius; Haworth; Stephens; Wood, fig. 658.

SPECIES 12.—EUPITHECIA EXIGUATA[r].—(Plate LXIX., Fig. 11.)—Measures 9 or 10 lines in expanse; wings whitish-grey, or luteous-ochre, clouded with brown, the ordinary strigæ being almost obliterated, with the ordinary black dot in the middle of the wing, beyond which is a straight pectinated striga, formed of acute lineolæ; between which and the apical margin is a fascia, formed of three brown, transverse, exactly trapeziform spots; hind wings brownish, with the anal angle ashy, and a central dark dot. The caterpillar is dull green, with a reddish stripe down the back and pale lines on the sides. It feeds on the common barberry, and the moth is taken in June, in woods and hedges.

[r] SYNONYMES.—*Geometra exiguata*, Hübner; Stephens; Wood; fig. 659.
Phalæna trimaculata, Haworth (variety).
Eupithecia ochreata, Stephens (variety).

SPECIES 13.—EUPITHECIA ABBREVIATA[s].—(Plate LXIX., Fig. 12.)—Measures 9 lines in expanse, and has the wings whitish, clouded with ashy, and with various brownish strigæ, and four black lineolæ; one (being the ordinary dot attenuated) on the disk, another more elongated at the base, and two between the middle and hinder margin of the wing; the striga beyond the central dot is much incurved next the costa; there is also a pale subapical striga. Taken in various places in June, but widely dispersed and rare.

[s] SYNONYME.—*Geometra abbreviata*, Hübner; Stephens; Wood, fig. 660.

SPECIES 14.—EUPITHECIA SINGULARIATA[t].—Measures 11 lines in expanse; wings ashy-grey, somewhat clouded, and obsoletely waved, all bearing a conspicuous black dot near the centre, and an interrupted marginal black line; hind wings ashy, with a brown margin, bearing an evanescent, whitish, undulated striga. Darenth Wood, June. Very similar to the two next species.

[t] SYNONYME.—*Phalæna Geometra singulariata*, Villers; Haworth; Stephens; Wood, fig. 661.

SPECIES 15.—EUPITHECIA NEBULATA[u].—(Plate LXIX., Fig. 13.)—Measures 10 lines in expanse; all the wings grey, slightly clouded with black, forming strigæ; the fore ones narrowed, and with a central black dot, nearly evanescent; the disk more or less tinged with reddish; the apical margin with an indistinct, pale, waved striga; hind wings ashy, with two evanescent strigæ, formed of black lineolæ. Taken in woods, in June.

[u] SYNONYME.—*Phalæna nebulata*, Haworth; Stephens.

SPECIES 16.—EUPITHECIA ALBIPUNCTATA[v].—(Plate LXIX., Fig. 14.)—Measures from 10 to 12 lines in expanse; wings brown, obsoletely clouded with white; the fore ones with the ordinary black dot in the middle, and a common striga near the apical margin of all the wings, scarcely undulated and formed of white dots, and with a white spot on the costa, preceding the striga; hind wings brown, with a subapical striga. Taken in woods, in June.

[v] SYNONYME.—*Phalæna albipunctata*, Haworth; Stephens.

SPECIES 17.—EUPITHECIA SUBUMBRATA[w].—(Plate LXIX., Fig. 15.)—Measures 7 or 8 lines in expanse; wings grey or grey-brown, with various, acute-shaped, dark clouds, more disposed into strigæ than in the last

species; in some specimens with a narrow fascia before the middle of the wing, abruptly angulated towards the costa, and formed of confluent brownish strigæ; the middle of the wing with the ordinary black dot; hind wings paler, with dark strigæ, especially on the anal edge of the wings. Taken in June and July, in woods; but not common.

[w] Synonyme.—*Geometra subumbrata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 664.

Species 18.—Eupithecia subfasciata[x].—(Plate LXIX., Fig. 16.)—Measures 10½ lines in expanse; fore wings narrow, brown, with black longitudinal dashes on the veins, an indistinct fascia across the middle, and a pale dentated striga near the extremity of the wings, and an interrupted, black, slender line on the margin itself; hind wings paler towards the costal margin, and obscurely strigose on the anal margin. Very rare. Taken in Darenth Wood, in June.

[x] Synonyme.—*Eupithecia subfasciata*, Stephens; Wood, fig. 665.

Species 19.—Eupithecia vulgata[y].—(Plate LXIX., Fig. 17.)—Measures from 8 to 10 lines in expanse; wings greyish-brown, almost immaculate, with the ordinary central dot nearly obsolete, and a scarcely-visible, waved, whitish, subapical striga dilated toward the hinder angle of the wing, and edged with brown within, and with a slender, dusky, marginal line; cilia clouded with dusky; hind wings nearly resembling the fore ones. Taken very commonly in gardens, in June and July.

[y] Synonymes.—*Phalæna vulgata*, Haworth; Stephens.
Geometra minuta, Wien. Verz. (?); Hübner (?).

Species 20.—Eupithecia irriguata[z].—(Plate LXIX., Fig. 18.)—"Whitish, anterior wings with three dusky bands; the basal one angulated in the middle; the second slightly bent, interrupted in the middle, and terminating on the inner margin in three slender streaks; the third similarly curved, forming a border, divided transversely by a waved whitish streak, slightly interrupted in the middle; posterior wings with three waved griseous streaks, the marginal one darkest; all the wings with a central black dot, and the fringe griseous, interrupted with dusky. Taken in April, on the mountains of South Wales."* We are indebted to the kindness of Mr. Stephens for the preceding description.

[z] Synonyme.—*Geometra irriguata*, Hübner, Geome., 77, f. 397; Treitschke, Sch. Eur., vi. st. 2, p. 124; Duponchel, L. F. v. vii. t. 202, f. 8.

DESCRIPTION OF PLATE LXX.

Insects.—Fig. 1. Eupithecia subfuscata (the brown grey pug).
" Fig. 2. Eupithecia innotata (the unspotted pug).
" Fig. 3. Eupithecia notata (the dotted pug).
" Fig. 4. Eupithecia elongata (the long-winged pug).
" Fig. 5. The Caterpillar.
" Fig. 6. Eupithecia simpliciata (the plain pug).
" Fig. 7. Eupithecia pusillata (the small grey pug).
" Fig. 8. Eupithecia absinthiata (the wormwood pug).
" Fig. 9. Eupithecia sobrinata (the Scotch pug).
" Fig. 10. Eupithecia angustata (the narrow-winged pug).
" Fig. 11. Eupithecia plumbeolata (the lead-coloured pug).
" Fig. 12. Eupithecia subfulvata (the tawny pug).
" Fig. 13. Eupithecia cognata (the allied pug).
" Fig. 14. Eupithecia succenturiata (the bordered lime-speck pug).

Insects.—Fig. 15. Eupithecia piperata (the peppered pug).
" Fig. 16. Eupithecia centaureata (the lime-speck pug).
" Fig. 17. The Caterpillar.
" Fig. 18. Eupithecia variegata (the marbled pug).
" Fig. 19. Eupithecia consignata (the pinion-spotted pug).
" Fig. 20. Eupithecia venosata (the netted pug).
" Fig. 21. The Caterpillar.
Plant.—Fig. 22. Centaurea nigra (common knapweed).

E. subfuscata, E. notata, and E. innotata, are from the cabinet of J. F. Stephens, Esq.; the rest are from the collection of Mr. Bentley. The caterpillars are from Hübner. The caterpillar of E. elongata is sometimes brown. H. N. H.

* Boisduval gives the south of France and June as the place and time of appearance of this species.

SPECIES 21.—EUPITHECIA SUBFUSCATA[a].—(Plate LXX., Fig. 1.)—Measures 9 or 10 lines in expanse, and has all the wings ashy-brown, with the apical margin, and a dot in the middle of each, darker; the former bearing a nearly obsolete, whitish, undulated striga, terminating near the hinder margin in a more distinct dot; the disk of the wing with nearly obsolete dusky strigæ, most distinct on the costa. Taken in gardens, about the end of May.

[a] SYNONYME.—*Phalæna subfuscata*, Haworth; Stephens; Wood, fig. 667.

SPECIES 22.—EUPITHECIA INNOTATA[b].—(Plate LXX., Fig. 2.)—Measures 10 lines in expanse, and has the wings greyish-brown; the fore ones with two fasciæ, composed of four slender, waved, dark strigæ, which are very indistinct, and with a black central dot, and a darker subapical striga, bordered by a waved whitish one; the costa with several equidistant dark dots; hind wings paler at the base. Taken near Darenth Wood, Kent, in June.

[b] SYNONYME.—*Phalæna innotata*, Borkhausen; Hübner; Stephens, Wood, fig. 668.

SPECIES 23.—EUPITHECIA NOTATA[c].—(Plate LXX., Fig. 3.)—Measures 9 lines in expanse; "fore wings greyish-brown, without the vestige of strigæ, with a small, central, round, black dot; posterior wings rather paler, with some indistinct darker strigæ." Taken near London, in June.

[c] SYNONYME.—*Eupithecia notata*, Stephens, Ill. Haust., 3, p. 286; Wood, fig. 669.

SPECIES 24.—EUPITHECIA ELONGATA[d].—(Plate LXX., Figs. 4, 5.)—Measures from 11 to 13 lines in expanse; all the wings uniformly brown and elongated; the fore ones with some spots on the costa blackish, and with a larger, black, elongated, central spot, placed towards the costa, and with a subapical, pale, waved, very indistinct striga; the hind wings rather paler, with the ordinary dot smaller. Taken in gardens, in June. The caterpillar is slender, and either green or brown, with slender black markings.

[d] SYNONYMES.—*Phalæna elongata*, Haworth; Stephens; Wood, fig. 671.
Geometra pimpinellata, Hübner.

SPECIES 25.—EUPITHECIA SIMPLICIATA[e].—Measures 9 or 10 lines in expanse, and is of a more robust figure, and with broader rounder wings than the preceding species; they are of a greyish-ash, with very indistinct paler strigæ, and with a paler undulated one beyond the middle of the wing, and with a darker margin to all the wings, which is very slightly marked with a waved pale line; the disk with the ordinary brown dot; hind wings slightly strigose, and with a waved, paler, slender, subapical line. Taken in woods, gardens, and lanes, in July.

[e] SYNONYME.—*Phalæna simpliciata*, Haworth; Stephens; Wood, fig. 672.

SPECIES 26.—EUPITHECIA PUSILLATA[f].—(Plate LXX., Fig. 7.)—Measures 7 or 8 lines in expanse; all the wings pale-ashy, with rather darker strigæ, and a border common to all the wings, and with the ordinary black central dot; hind wings rather darker ashy, slightly strigose towards the anal margin. Taken in gardens and woods.

[f] SYNONYME.—*Geometra pusillata*, Hübner; Haworth; Stephens; Wood, fig. 673.

SPECIES 27.—EUPITHECIA ABSINTHIATA[g].—(Plate LXX., Fig. 8.)—Measures 10 lines in expanse; all the wings grey-brown; the fore ones with the costa marked with dark spots, and with the ordinary black central dot, and an interrupted undulated white line near the apical margin, which is dilated next the inner angle; hind wings with the anal angle ashy, bearing a whitish dot, and the anal margin slightly strigose. Common in gardens, at the end of June.

[g] SYNONYME.—*Phalæna Geometra absinthiata*, Linnæus; Haworth; Hübner (?); Stephens; Wood.

SPECIES 28.—EUPITHECIA SOBRINATA[h].—(Plate LXX., Fig. 9.)—"Griseous-brown or dusky; anterior wings varied with numerous, waved, black streaks, repeated in pairs, and some of them edged with whitish; the central streaks angulated, and of a deeper black; posterior wings also with waved dusky streaks, abbreviated towards the costa; fringe of all the wings griseous, with a row of black dots at the base. Found in June, on the mountains of Arran, and other parts of Scotland." Stephens's MSS. Boisduval states that it occurs near Paris, in places where juniper abounds.

[h] SYNONYME.—*Geometra sobrinata*, Hübner, Ge., t. 90, f. 465; Treitschke, vi. t. 112; Dup. vii. 477, t. 204, f. 4.

SPECIES 29.—EUPITHECIA ANGUSTATA[i].—(Plate LXX., Fig. 10.)—Measures 8 or 9 lines in expanse, and has the fore wings very elongated and sublanceolate, of an ashy colour, with the middle of the wing darker, and with three oblique, nearly equidistant, whitish strigæ; the first straight, but very oblique, running from the middle of the hind margin to the costa, interrupted by the dark central ordinary spot; the second twice as broad, slightly waved, beyond that spot; and the third more distinct, but slenderer, and undulated near the apical margin; hind wings elongated, ashy, with very indistinct paler strigæ. Taken in woods, about the beginning of August.

[i] SYNONYME.—*Phalæna angustata*, Haworth; Stephens; Wood, fig. 686.

SPECIES 30.—EUPITHECIA PLUMBEOLATA.—(Plate LXX., Fig. 11.)—Measures 7 or 8 inches in expanse; wings leaden-ashy coloured, with numerous, nearly obsolete, darker and lighter strigæ, without the ordinary dark dot in the middle of the wings. Found in woods, especially in the neighbourhood of Darenth, Kent, about the end of May.

[j] SYNONYME.—*Phalæna plumbeolata*, Haworth; Stephens; Wood, fig. 674.

SPECIES 31.—EUPITHECIA SUBFULVATA[k]. (Plate LXX., Fig. 12.)—Measures 11 or 12 lines in expanse; fore wings fulvous or reddish-brown, with the costa and apical margin brown; the former with paler markings, indicating the origin of the ordinary strigæ; the disk with the ordinary dark dot, and with a subapical, whitish, waved striga; hind wings brown. Taken in woods about the middle of August, but not common.

[k] SYNONYMES.—*Phalæna subfulvata*, Haworth; Stephens; Wood, fig. 675.
Larentia oxydata, Treitschke (?).

SPECIES 32.—EUPITHECIA COGNATA[l].—(Plate LXX., Fig. 13.)—Measures 11 lines in expanse of the fore wings, which are ashy, slightly marbled with reddish-brown and whitish, with four waved paler strigæ—one towards the base, the second in the middle, the third beyond, and the fourth subapical; the costa marked with darker intermediate patches; several of the veins streaked with black, and with the ordinary black spot on the disk; hind wings paler, with a distinct darker striga. Taken in several parts of Scotland.

[l] SYNONYME.—*Eupithecia cognata*, Stephens, Illust. Haust., 3, p. 288; Wood, fig. 676.

SPECIES 33.—EUPITHECIA SUCCENTURIATA[m].—(Plate LXX., Fig. 14.)—Measures 11 to 12 lines in expanse, and has all the wings whitish-ashy, and but slightly clouded; the costa of the fore wings marked with broad darker patches; disk with the ordinary dark dot, succeeded by a slightly-indicated, dusky, waved striga; and the apical margin of all the wings darker brown, and bearing an undulated whitish line. The caterpillar chocolate-brown, with white stripes on the sides; it feeds on the wormwood, and the moth appears in July, in the woods of Kent and Surrey, but is not very common.

[m] SYNONYME.—*Phalæna Geometra succenturiata*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 677.

SPECIES 34.—EUPITHECIA PIPERATA[n].—(Plate LXX., Fig. 15.)—Measures 9 or 10 lines in expanse; "wings whitish, anterior thickly sprinkled throughout with minute darker or cinereous atoms, somewhat disposed in

strigæ, with a small, central, black dot; the costa and posterior margin fuscous-ash, the latter with an obscure whitish striga; posterior wings whitish at the base; the posterior margin brownish-ash, with irregular pale striga; on the hinder margin of all an interrupted, faint, pale line; cilia fuscous. Taken in the beginning of July, on Riddlesdown, near Croydon. Apparently scarce."—Stephens, l. c.

[n] Synonyme.—*Eupitheeia piperata*, Stephens, Ill. Haust., 3, 288; Wood, fig. 678.

Species 35.—Eupithecia centaureata[o].—(Plate LXX., Figs. 16, 17.)—Measures from 8 to 10 lines in expanse; wings white, slightly clouded with black; the fore ones with the costa subinterrupted, blackish, having a dark nearly trigonate spot beyond the middle, in which is a black lunule, and with a white, undulated, subapical line; hinder margin clouded with brownish; hind wings white, with the anal and apical margins, and the small, ordinary, subcentral, dark dot, more or less brown or brownish; the former with indications of strigæ. Taken in gardens, in June. The caterpillar is pale yellowish-green, with black markings on the back and sides; it feeds on Centaurea scabiosa, and other plants.

[o] Synonymes.—*Geometra centaureata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 679; Harris, Aurelian, pl. 19, fig. a—f. | *Phalæna oblongata*, Thunberg. *Phalæna signata*, Scopoli.

Species 36.—Eupithecia variegata[p].—(Plate LXX., Fig. 18.)—Measures 10 lines in expanse; wings whitish, marbled with brownish shades, especially on the costa; a nearly straight striga near the base, beyond which is a narrow similar fascia, followed by another narrow fascia before the middle, and a central, unangulated, ashy-coloured fascia, in which are three narrow brown marks, the ordinary black spot resting on the first of them; and the apical margin undulated and brown, interrupted with whitish; hind wings ashy. Taken in the woods round London, in June; also reared at the end of April by Mr. Lambert, from the larvæ found in September.

[p] Synonymes—*Phalæna variegata*, Haworth; Stephens; Wood, fig. 681.
Eupithecia insignata, Curtis; Hubner.

Species 37.—Eupithecia consignata[q].—(Plate LXX., Fig. 19.)—Measures 9 lines in expanse; the wings are somewhat glaucous-coloured, with darker geminated strigæ, which run together at the costa of the fore wings forming black dots, and with a short, straight, black streak in the place of the ordinary dark dot near the middle of the wing towards the costa, beyond which is a triangular dark patch placed rather obliquely; the hind wings are whitish-ashy, with the ordinary dark central dot, and the outer margin indistinctly strigose. Very rare. Taken about the end of June, in woods. The chrysalis found under the bark of the whitethorn, by A. Cooper, Esq., in April.

[q] Synonyme.—*Geometra consignata*, Borkhausen; Hübner; Haworth; Stephens; Wood, fig. 682.

Species 38.—Eupithecia venosata[r].—(Plate LXX., Figs. 20, 21.)—Varies from 10 to 12 lines in expanse; wings brownish-white; the fore ones marked with six clear but very delicate strigæ, the first, third, fourth, and fifth of which are thickened towards the costa; the first is incurved and plain, the second very slender and deeply angulated in the middle, as is also the third, which is dentate behind the middle; the fourth is approximate to the preceding behind, but wider apart towards the costa; the fifth is deeply waved and dentated, as is also the sixth, which last sends forth longitudinal, black, slender streaks to the apical margin; hind wings slightly strigose towards the anal and outer margin. The caterpillar is dull green, with a dark dorsal line. Taken about the beginning of June, in gardens and lanes near woods, but rare. This is one of the most elegantly-marked species in the genus.

[r] Synonymes.—*Phalæna venosata*, Fabricius; Haworth; Stephens; Wood, fig. 683.
Phalæna decussata, Donovan, vol. viii., pl. 266, fig. 3.

DESCRIPTION OF PLATE LXXI.

INSECTS.—Fig. 1. Cleogene niveata.
„ Fig. 2. Hyria Auroraria (the purple-bordered gold).
„ Fig. 3. Hyria ——— var.
„ Fig. 4. Minoa Chærophyllata (the chimney sweeper).
„ Fig. 5. Minoa Euphorbiata (the drab looper).
6. The Caterpillar.
„ Fig. 7. Bapta bimaculata (the white pinion spotted).
„ Fig. 8. Bapta punctata (the clouded silver).
9. The Caterpillar.
„ Fig. 10. Aplocera Cæsiata (the February carpet).
„ Fig. 11. Aplocera ——— var., flavicinctata.
„ Fig. 12. Emmelesia decolorata (the sandy carpet).
„ Fig. 13. Emmelesia affinitata (the rivulet).
„ Fig. 14. Emmelesia turbaria (the middle rivulet).
„ Fig. 15. Emmelesia rivulata (the small rivulet).
„ Fig. 16. Emmelesia ericetata (the heath rivulet).
„ Fig. 17. Emmelesia blandiata.

INSECTS.—Fig. 18. Emmelesia albulata (the grass rivulet).
„ Fig. 19. Emmelesia tæniata.
„ Fig. 20. Emmelesia unifasciata (the single-barred rivulet).
„ Fig. 21. Emmelesia bifasciata (the double-barred rivulet).
„ Fig. 22. Emmelesia rusticata, male (the least carpet).
23. Ditto female.
„ Fig 24. Emmelesia sylvata (the waved carpet).
„ Fig. 25 Emmelesia Blomeri (Captain Blomer's rivulet).
„ Fig. 26. Emmelesia candidata (the small white wave).
„ Fig. 27. Emmelesia luteata (the small yellow wave).
„ Fig. 28. Emmelesia heparata (the dingy shell).

The whole of the insects figured in this plate are from the cabinet of Mr. Bentley, with the exception of Cleogene niveata and Emmel. tæniata, from the cabinet of Mr. Stephens, and E. blandiata, from Hübner. The caterpillars are from Hübner and Freyer. H. N. H.

CLEOGENE, DUPONCHEL. MINOA, PARS TREITSCHKE.

The antennæ are bipectinated in the males; the palpi short, acute, and villose; the spiral tongue long; the wings rounded, destitute of markings, and unicolorous; and the insects of small size—the female being smaller than the male; the larvæ are but slightly elongated and gibbose. The males fly by day in mountainous places, the female resting amongst the grass.

SPECIES 1.—CLEOGENE NIVEATA[s].—(Plate LXXI., Fig. 1.)—Measures nearly 1 inch in expanse; fore wings pearly-white, and without any markings; hind wings snow-white. Mr. Stephens possesses an unique specimen of the female from Scotland.

[s] SYNONYMES.—*Phalæna niveata*, Scopoli; Treitschke; Hübner; Stephens; Wood, fig. 684. | *Geometra farinata*, Borkhausen. *Siona niveata*, Boisduval.

PHALÆNA NIVEATA, Fabricius, Ent. Syst., 3, part 1, p. 129 ("habitat in Anglia"), is distinct from the above; it has the wings subangulated and white; the fore ones with the posterior margin brown, and a central spot in the hind wings black.

CLEOGENE TINCTORIA[t].—Measures 1 inch in expanse, and has all the wings of a pale clay colour, and destitute of markings. Supposed to have been introduced by mistake into the British lists.

[t] SYNONYMES.—*Geometra tinctoria*, Hübner; Treitschke; Duponchel; Stephens; Wood, plate 54, fig. 63. | *Geometra lutearia*, Esper; Fabricius. *Cleogene tinctoria*, Boisduval.

HYRIA, STEPHENS, CURTIS. FIDONIA, PARS GODART.

The antennæ of the males are ciliated, and furnished with long bristles on both sides; in the males the spiral tongue rather short; the palpi very short and horizontal, obtuse at the tip; the wings in repose form a depressed triangle; they are rounded and obtuse, and the hind tibiæ in the males are destitute of spurs at the tip, and those of the female have only a pair at the tip. The females are much rarer than the males; they rest amongst long coarse grass during the day, in marshy places. The caterpillars are long and vermiform.

SPECIES 1.—HYRIA AURORARIA[u].—(Plate LXXI., Figs. 2, 3.)—Measures about $\frac{3}{4}$ of an inch in expanse; wings orange, varied with lilac-purple (which soon fades), leaving a moderate-sized orange patch in the centre of each, as well as the posterior portion and apical margin of the fore wings, and having a slender, subapical, blackish

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fascia. Taken in marshy places near Croydon (Surrey), Horning (Norfolk), and Bristol, towards the end of June. The caterpillar is greyish, with pale dorsal and lateral streaks; it feeds on the great plantain. The transformations of this insect are beautifully figured by Lyonnet, in his "Posthumous Researches," pl. 32.

[u] Synonymes.—*Geometra auroraria*, Hübner; Haworth; Curtis, pl. 523; Stephens; Wood, fig. 685.
Pyralis auroralis, Wien. Verz.
Geometra variegata, Fabricius.
Geometra sanguinaria, Hübner.
Phalæna muricata, Hufnagle.

MINOA, Treitschke. MINOA and ODEZIA, Boisduval.

The palpi are minute and remote; the antennæ simple but robust in the males; the spiral tongue rather long; the wings carried erect when at rest; entire, rounded at the angles, and destitute of markings; the posterior tibiæ in both sexes are furnished with two pairs of spurs. The perfect insects fly by day, amongst ferns, in open places, in woods, etc. The caterpillars are naked, and attenuated in front; those of the second species are, however, inflated in the middle, and rather pilose.

Species 1.—Minoa chærophyllata[v].—(Plate LXXI., Fig. 4.)—Measures from 1 to 1⅛ inch in expanse, and has the wings sooty-black, except a small apical streak of white along the tip of the fore ones. The caterpillar is obscure green, with a paler head; it feeds on Chærophyllum sylvestre, and the moth appears in June, in open places in woods, in great plenty.*

[v] Synonymes.—*Phalæna chærophyllata*, Linnæus; Harris; Aurelian, pl. 30, fig. o; Donovan, 7, pl. 253, fig. 4; Haworth; Stephens; Wood, fig. 686.
Phalæna atrata, Linnæus, Fauna Su.
Tanagra chærophyllata, Duponchel.
Odezia chærophyllata, Boisduval.

Species 2.—Minoa euphorbiata[w].—(Plate LXXI., Figs. 5, 6.)—Measures about ¾ inch in expanse, and has the wings entirely ashy-brown, slightly tinged with luteous. The caterpillar is yellowish-green, spotted with black and white, and with a dark line down the back, and a reddish head. It feeds on several species of Euphorbia; and the moth appears at the end of May, in woody places, and is far from rare.

[w] Synonymes.—*Phalæna euphorbiata*, Wien. Verz.; Fabricius; Donovan, 5, pl. 153, fig. 1; Hubner; Haworth; Stephens; Wood, fig. 687.
Geometra murinata, Scopoli, Villars.
Phalæna fuscata, Hufnagle.
Phalæna sordiata, Haworth (olim); Villars and Mus. Linn.

BAPTA, Stephens. MACARIA, p. Curtis. ACIDALIA, p. Bdv.

The antennæ are short and simple in both sexes; the palpi short and ascending, obtuse at the tip; the spiral tongue long; the thorax and abdomen rather robust; the wings large, entire, and rounded along the apical margin, and of a white colour, varied with black markings. The caterpillars are robust, smooth, and entire.

Species 1.—Bapta bimaculata[x].—(Plate LXXI., Fig. 7.)—Measures from 1 to 1⅛ inch in expanse, and has the wings snowy-white, with the costa and apical margin slightly luteous; the former with two black dots, and a minute black speck near the middle of the wing towards the costa; beyond which is a slightly-defined brownish striga, which runs across all the wings. Taken about the beginning of June, in woods and lanes, especially round the north of London, but rare.

[x] Synonymes.—*Phalæna Geometra bimaculata*, Villars; Haworth; Stephens; Wood, fig. 688.
Geometra laminata, Wien. Verz.; Hübner.

* Many years ago my friend Templeton showed me a black Geometrideous moth, much larger than M. chærophyllata, which he had captured on one of the mountains in Ireland, and of which at the time I made a sketch, but which I have unfortunately mislaid. I have seen nothing like the insect in any collection I have examined. [From the information given in the preceding note the late Mr. Stephens was led to consider the insect as the Geometra torvaria of Hübner, Museum Lepidoptera, pl. 56. I have since, however, ascertained that the insect is the Cleogene Peletieraria of Duponchel. A reduced copy of my sketch will appear in the supplemental plates to the new edition of Wood's "Index Entomologicus." J. O. W., October, 1853.]

SPECIES 2.—BAPTA PUNCTATA[y].—(Plate LXXI., Figs. 8, 9.)—Measures about $1\frac{1}{3}$ inch in expanse; wings snow-white, the fore ones with the ordinary central dark dot, a small mark nearly opposite to this on the inner margin of the wing, a subapical fascia not quite reaching to the costa, and a dark patch on the apical margin, which has a row of black dots; the hind wings are slightly atomose, and have a submarginal, dusky, almost evanescent fascia; the fringe of the fore wings ashy, that of the hind ones white. The caterpillar is green, but grey beneath, with a darker line on each side, and with the head and dorsal patches of brown. It feeds on the species of Prunus, and the moth appears in June, frequenting woody places, but it is rare.

[y] SYNONYMES.—*Phalæna punctata*, Fabricius; Stewart; Turton. *Phalæna rubeculata*, Haworth.
Geometra temerata, Wien. Verz.; Hübner, fig. 91.

APLOCERA, STEPHENS.

As restricted by Mr. Stephens in his "Illustrations," this genus is distinguished by its perfectly simple antennæ in both sexes; the wings large, entire along the apical margin, with the disk thickly marked with waved lines; the palpi are short and slender, very squamose; the spiral tongue rather short; the abdomen slender.

SPECIES 1.—APLOCERA CÆSIATA[z].—(Plate LXXI., Fig. 10.)—Measures from $1\frac{1}{4}$ to $1\frac{1}{3}$ inch in expanse, and has the fore wings brownish, with a dark brown, broad, dentated fascia across the middle, edged with white behind, and which is bifid towards the costa, bearing the ordinary black central dot in the furcation; the base of the wing is traversed by several slender, dark, undulating strigæ, as well as the space beyond the middle, which is also marked with a waved, white, subapical striga, and the apical margin with a row of dots, placed in pairs; hind wings brownish, slightly strigose, and with a pale subapical striga; margin dotted with black, as in the fore wings. Taken in the north of England, in June, frequenting old walls. (Mr. Haworth gives the end of February, and the neighbourhood of Peckham, as its time and place of capture.)

[z] SYNONYMES.—*Geometra cæsiata*, Wien. Verz.; Hübner; Haworth; Stephens.
Phalæna infrequentata, Haworth (variety).

SPECIES 2.—APLOCERA FLAVICINCTA[a].—(Plate LXXI., Fig. 11.)—Measures from $1\frac{1}{3}$ to $1\frac{1}{2}$ inch in expanse, with the wings grey, thickly irrorated, with undulating and dentated dark lines, and with four clay-coloured fasciæ, three of which are placed before the middle of the wing, and the fourth beyond, the space behind which is paler, but much clouded with a subapical, waved, whitish striga, bearing fulvous dashes directed inwards; the apical margin with black dots, arranged in pairs; hind wings pale greyish, with a subapical, waved, dusky fascia. Taken in Cumberland, in June. This may be a fine variety of the preceding species.

[a] SYNONYME.—*Geometra flavicincta*, Hübner; Stephens, Ill. H., 3, pl. 30, fig. 3.

EMMELESIA, STEPHENS. MELANIPPE, CURTIS.

These insects have the palpi short and horizontal, with the tip subglobose; the spiral tongue rather long; the antennæ simple in both sexes, or sometimes pubescent in the males; the wings are entire along the apical margin, generally of a pale colour, with undulated dark and light strigæ; when at rest they form a depressed triangle. The caterpillars are long, slender, and smooth, and feed upon low plants. Mr. Curtis has proposed two sections in the genus, some of the species possessing two pairs of spurs, and some only one pair to the hind tibiæ.

SPECIES 1.—EMMELESIA DECOLORATA[b].—(Plate LXXI., Fig. 12.)—Varies from 1 to 1⅛ inch in expanse; fore wings pale buff-coloured, with rather pale undulations, and with four obsoletely-dentated white fasciæ, which are equidistant, the first being placed near the base, the second rather before the middle, the third broader, beyond the middle, and often interrupted; the fourth very slender and subapical. The hind wings are white, with a subcentral striga, and the apical margin slightly brownish. Very common in hedges and lanes, near woods, in June.

[b] SYNONYME.—*Geometra decolorata*, Hübner; Haworth; Stephens

SPECIES 2.—EMMELESIA AFFINITATA[c].—(Plate LXXI., Fig. 13.)—Measures rather more than an inch in expanse; wings of a brownish-clay colour, with brown undulated strigæ, and with a conspicuous, white, irregularly-waved fascia beyond the middle, in which is a slender, brownish, undulated striga; between this fascia and the apical margin is a very slender, nearly obsolete striga, formed of white arches, and at the apex itself the ordinary oblique, short, brown line. Hind wings pale brown, with a slightly-crenated, whitish, subapical fascia. Widely dispersed, and far from rare. Taken in June.

[c] SYNONYMES.—*Emmelesia affinitata*, Hübner.
Geometra alchemillata, Haworth, but not of Stephens.

SPECIES 3.—EMMELESIA TURBARIA[d].—(Plate LXXI., Fig. 14.)—Measures 10 or 11 lines in expanse; wings brown, with numerous, slender, darker waves; the fore ones with a fascia in the middle, which is narrow, and darker than the rest of the wing, followed by a narrow, more or less obsolete, white, sinuated, waved striga, placed beyond the middle followed by a nearly obliterated, subapical, paler striga. Hind wings brown, with a dark dot in the middle, and an obsolete paler fascia beyond the middle. Found about the end of June, in numerous parts of the country, and far from rare.

[d] SYNONYMES.—*Phalæna turbaria*, Wien. Verz.; Stephens, Ill.; Hübner.
Geometra rivulata, Haworth, but not of Hübner.

SPECIES 4.—EMMELESIA RIVULATA[e].—(Plate LXXI., Fig. 15.)—Measures about ¾ inch in expanse; fore wings pale fulvous-brown, with darker undulated strigæ, a pale greyish fascia before the middle, often indistinct, and a broad, irregularly-waved, white bar beyond the middle, in which is a slender brown line, and with a subapical, waved, very slender, white line; hind wings pale brown, very slightly undulated, and with the apical margin rather darker. The caterpillar is yellowish-green, with chestnut streaks; it feeds on the Lamium purpureum, and the moth appears in June, and is taken in grassy places, in woods and lanes, and is widely dispersed, but rather rare.

[e] SYNONYMES.—*Phalæna rivulata*, Wien. Verz.; Hübner; Stephens, Illustr., but not of Haworth.
Phalæna nassata, Fabricius; Haworth.

SPECIES 5.—EMMELESIA ERICETATA[f].—(Plate LXXI., Fig. 16.)—Measures 7 or 8 lines in expanse; fore wings ashy-white, with several blackish curved strigæ towards the base, followed by a central bar, with the edges very irregular and spotted with black, and bearing in its open part the ordinary black dot; followed by a pale whitish bar, in which is a slender brownish striga; the apical portion of the wing brown and grey, with a subapical, dentated, white striga; apical margin with black dots, arranged in pairs; hind wings slightly strigose. Taken in the north of England and Scotland, in June and July.

[f] SYNONYME.—*Geometra ericetata*, Stephens, Illustr. H., 111, pl. 32, fig. 3.

SPECIES 6.—EMMELESIA BLANDIATA[g].—(Plate LXXI., Fig. 17.)—Measures ¾ inch in expanse of the fore wings, which are snow-white, with an interrupted brown fascia in the middle, and the apical margin brownish, with an undulated white striga; the hind wings white at the base, with the apical margin brownish. Taken in the north of England and Scotland, in June.

[g] SYNONYME.—*Geometra blandiata*, Wien. Verz.; Hübner, fig. 258; Stephens.

SPECIES 7.—EMMELESIA ALBULATA[h].—(Plate LXXI., Fig. 18.)—Measures 9 or 10 lines in expanse, and has the fore wings whitish, with alternate, narrow, undulating fasciæ and strigæ, of greyish-red and white colours; the apical portion of the wing is greyish-red, in which is an undulated white striga, which runs across all the wings; hind wings brownish, with a narrow whitish fascia across the middle. Taken from the end of June to the beginning of August, in pasture grounds, and widely dispersed, but not common.

[h] SYNONYME.—*Phalæna albulata*, Wien. Verz.; Hübner; Fabricius; Haworth; Stephens.

SPECIES 8.—EMMELESIA TRIGONATA[i].—Measures $\frac{3}{4}$ inch in expanse, and has all the wings white, with an ashy-coloured fascia at the base, another in the middle, not interrupted, but formed of a costal patch, having a nearly triangular black spot, terminating in two obsolete brownish strigæ, which extend to the inner margin of the wing; the apical margin of all the wings is ashy, bearing a strongly-waved whitish striga. Taken at the end of June to the beginning of August, in hedges, at Westerham, Kent, and in Cumberland. This may prove to be a variety of the next species.

[i] SYNONYME.—*Phalæna trigonata*, Haworth; Stephens.

SPECIES 9.—EMMELESIA TÆNIATA[j],—(Plate LXXI., Fig. 19.)—Measures 11 lines in expanse, and has the fore wings ashy-fulvous, a narrow dark brown fascia near the base, followed by several dark strigæ, narrowed behind; across the middle of the wing runs a broad brown bar, enclosing a black central dot, with the edges waved and margined with white; the apex of the wing with a brown patch, behind which it is varied with white and luteous, with a waved, subapical, slender, whitish striga; hind wings with a central dark dot, and a subapical pale striga. Taken in Cumberland, in July.

[j] *Emmelesia tæniata*, Stephens, Ill. Haust., vol. iii., pl. 32, fig. 2.

SPECIES 10.—EMMELESIA UNIFASCIATA[l].—(Plate LXXI., Fig. 20.)—Measures 10 or 11 lines in expanse, and has the wings brownish-grey, with a central bar across the fore wings of brown, in which is the dark ordinary dot, and having the inner margin incurved towards the costa, and along the outer margin is a narrow, somewhat obsolete, subinterrupted, white, undulating striga; near the apex is a faint, didymated, brown spot, and a short, dark, oblique dash; the margin itself with a dark slightly-interrupted line; hind wings brown, with a small central dot. Taken in the woods of Kent, in June and August.

[l] SYNONYMES.—*Phalæna unifasciata*, Haworth; Stephens.
Acidalia salicaria, Treitschke (?).

SPECIES 11.—EMMELESIA BIFASCIATA[m].—(Plate LXXI., Fig. 21.)—Measures 11 lines in expanse, and has the fore wings ashy; with two oblique, nearly straight, contiguous fasciæ, bordered on each side with white; the outer one rather beyond the middle of the wing, and rather sinuated and extended outwards; beyond these fasciæ there is a brown, somewhat didymated spot towards the costa, and another smaller didymated one at the apical angle; hind wings ashy. Taken in various parts of Kent and other parts of England, as well as in Scotland, at the end of June.

[m] SYNONYME.—*Phalæna bifasciata*, Haworth; Stephens; Curtis.

SPECIES 12.—EMMELESIA RUSTICATA[n].—(Plate LXXI., Figs. 22,23.)—Measures $\frac{2}{3}$ of an inch in expanse; fore wings white, somewhat clouded with brown at the base, and with a brown waved fascia in the middle, enclosing the ordinary black dot, with the outer margin as it were three-lobed; between which and the apical margin, in fine specimens, is a brownish striga; hind wings whitish, with a central dark dot, and with ashy waves.

[n] *Phalæna rusticata*, Wien. Verz.; Fabricius; Hübner; Haworth; Stephens.

towards the base; margins of all the wings dotted with black, which are occasionally wanting. Taken in the woods of Kent and Surrey, but not common, in June and July.

SPECIES 13.—EMMELESIA SYLVATA [o].—(Plate LXXI., Fig. 24.)—Measures about 1 inch in expanse, and has the wings whitish, sprinkled and clouded with brown atoms; a very narrow striga of brown across the fore wings near the base; across the middle of the wings is a crenated bar, composed of several confluent strigæ; between which and the apical margin is a waved fuscous striga, and a row of dots on the margin itself; hind wings with similar strigæ; fringe ashy. Taken in the woods of Kent and Surrey, and elsewhere, at the end of May.

[o] SYNONYMES.—*Geometra sylvata*, Hübner; Haworth; Stephens.
Phalæna testaceata, Donovan, 14, pl. 487, fig. 1.

SPECIES 14.—EMMELESIA BLOMERI [p],—(Plate LXXI., Fig. 25.)—Measures about 1 inch in expanse; pale grey, freckled with dark irrorations, a slender dark striga, and a pale luteous one near the base; a double blackish spot on the costa before the middle; an interrupted striga beyond it, extending nearly to the anal angle, where it is duplicated; apex fulvous, edged within with a black line, and with a pale, subapical, waved line edged with black; the hind part of the apical portion grey, and with a marginal row of black dots; hind wings strigose, and with the edge dotted with black. Taken at the beginning of July, in "Castle Eden Dene, Durham, among birch and elders, by the side of the beck that runs through the Dene, formed in magnesian limestone," by Mr. Wailes; also at Chenies, in the middle of June.

[p] SYNONYME.—*Melanippe Blomeri*, Curtis, Brit. Ent., pl. 416; Wailes, in Ent. Mag., i. 43; Stephens, Ill., 4, 393.

SPECIES 15.—EMMELESIA CANDIDATA [q].—(Plate LXXI., Fig. 26.)—Measures 9 or 10 lines in expanse; all the wings snowy-white, glossy, and marked with five or six pale, luteous-brown, very undulated strigæ, of equal thickness, but placed at irregular distances apart, the two most contiguous running across the middle of the wing; the apical margin with a row of very minute dark dots. Very common in woods at the end of May and in June.

[q] SYNONYMES.—*Phalæna candidata*, Wien. Verz.; Hübner; Haworth; Stephens, but not of Fabricius.
Phalæna immutata, Fabricius, but not of Linnæus.
Phalæna albulata, Hufnagle.

SPECIES 16.—EMMELESIA LUTEATA [r].—(Plate LXXI., Fig. 27.)—Measures 10 lines in expanse; all the wings dark luteous, with numerous (about seven) very much waved, reddish-buff strigæ running across them at unequal distances; several, especially those in the middle of the wings, arranged in pairs; the hind wings with only four of the strigæ; all the wings with the ordinary dark fulvous-brown dot near the middle. Taken in the woods of Kent and Surrey, and numerous other localities, about the end of May, and rather common.

[r] SYNONYMES.—*Geometra luteata*, Wien. Verz.; Fabricius; Haworth; Stephens.
Phalæna centrata, Fabricius.
Phalæna flavo-strigata, Donovan, 11, pl. 386, figs. 1, 2.

SPECIES 17.—EMMELESIA HEPARATA [s].—(Plate LXXI., Fig. 28.)—Measures 12 or 13 lines in expanse; fore wings with anterior part dirty luteous, slightly marked with transverse strigæ, two being somewhat contiguous, and brown beyond the middle, and rather undulated towards the costa, but occasionally nearly obsolete; hind portion of the wings brown, and hind margin brown; fringe clay coloured, obscurely spotted with brown. Taken in woods, in June, in Kent, Surrey, and Norfolk; but rare. The caterpillar is green, having each segment spotted and streaked with white; it feeds on the common birch.

[s] SYNONYME.—*Geometra heparata*, Wien. Verz.; Hübner; Haworth; Stephens.

DESCRIPTION OF PLATE LXXII.

INSECTS.—Fig. 1. Strenia clathrata (the latticed heath).
„ Fig. 2. Venilia maculata (the speckled yellow).
„ Fig. 3. Venelia ——— var. quadrimaculata (the pinion-spotted yellow).
„ Fig. 4. Ptychopoda dilutaria (the small fan-footed wave).
„ Fig. 5. Ptychopoda ——— var. fimbriolata.
„ Fig. 6. Ptychopoda lividata (the single dotted wave).
„ Fig. 7. Ptychopoda trigeminata (the treble brown spot).
„ Fig. 8. Ptychopoda trigeminata var. (bisetata).
„ Fig. 9. Ptychopoda ornata (the lace border).
„ Fig. 10. Ptychopoda incanata (the mullein wave).
INSECTS.—Fig. 11. Ptychopoda—var. contiguaria (the tooth-striped wave).
„ Fig. 12. Ptychopoda immutata (the lesser cream wave).
13. Caterpillar.
„ Fig. 14. Ptychopoda rubricata.

The whole of the insects figured in this plate are from specimens in the cabinet of Mr. Bentley, with the exception of Bisetata, from a British specimen in the British Museum, and *P. rubricata*, from a continental specimen received from Dr. Becker, also in the Museum. The caterpillars are from Hübner. H. N. H.

STRENIA, DUPONCHEL. HERCYNA AND ANTE, STEPHENS (OLIM).

The antennæ are short and simple in both sexes, those of the males being slightly pubescent; the palpi are very short; the spiral tongue rather long; the wings, according to Boisduval, are elevated in repose, like those of butterflies; they are of a pale colour, marked with numerous dark lines, and the hind ones are rather slightly dentated. The caterpillars are slender, smooth, and cylindric.

SPECIES 1.—STRENIA CLATHRATA[t].—(Plate LXXII., Fig. 1.)—Measures from 11 to 14 lines in expanse; wings whitish or pale yellowish, irrorated with brown scales; very variable in their markings, but ordinarily having four irregular dark brown fasciæ, with an oblique, short, brown streak between the second and third; the fourth is much elbowed, and sometimes interrupted rather before the middle; and all the veins of the wings, as well as the apical margin, are brown; hind wings similarly marked, but wanting one of the basal fasciæ; frings white, with brown spots. The caterpillar is bluish-green, with a pale stripe spotted with black on each side. It feeds on the common trefoil, and the moth appears in May and July, in chalky fields, especially in Kent, and is very common and widely dispersed.

[t] SYNONYMES.—*Phalæna Geometra clathrata*, Linnæus; Donovan, 7, pl. 248, fig. 2; Haworth; Stephens.
Phalæna retialis, Scopoli.
Phalæna radiata, Haworth (variety).
Phalæna retata, Haworth (variety).

VENILIA, DUPONCHEL. MELANIPPE, PARS, BOISDUVAL.

The antennæ are rather short and pubescent beneath in the males; the palpi porrected horizontally like a short beak; the spiral tongue long; the wings forming a triangle in repose; they are of a large size and fulvous colour; the apex of the anterior ones slightly hooked, and the hind wings slightly sinuated; the hind tibiæ have two pairs of spurs.

SPECIES 1.—VENILIA MACULARIA[u].—(Plate LXXII., Fig. 2,)—Varies from 1 to 1¼ inch in expanse; wings fulvous or yellow; the base freckled with dark scales, and the disk with numerous, large, purplish-brown blotches, arranged into four irregular broken fasciæ; the second and third interrupted in the middle, and the hind portions generally confluent; the apical margin itself also slenderly edged with the same dark colour. The markings vary in almost every specimen. The caterpillar is greenish-blue, with a dark line down the back, and a pale line on each side. It feeds on several species of Lamium, and the moth is very abundant in woods, in May and June,

[u] SYNONYME.—*Phalæna Geometra maculata*, Linnæus; Hübner; Donovan, 7, pl. 251, fig. 3; Harris, Aurelian, pl. 28, fig. 1; Stephens.

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SPECIES 2.—VENILIA 4-MACULARIA[w].—(Plate LXXII., Fig. 3.)—Measures 13 lines in expanse; wings ochreous-yellow; anterior ones with the costa freckled with dark scales at the base, and with three or four purplish-brown spots. Taken in April and May, in some of the woods in Middlesex, to the north of London, but very rare. It has been supposed to be a variety of the preceding, but it appears too constant in its markings, many specimens of it having occurred.

[w] SYNONYME.—*Phalæna 4-maculata*, Hatchett, in Ent. Trans. Old Series, 1, pl. 7, fig. 3; Haworth; Curtis, Brit. Ent., pl. 647; Stephens.

PTYCHOPODA, STEPHENS. ACIDALIA, CURTIS.

The antennæ are slender and ciliated beneath in the males; the palpi small, but porrected horizontally, with the extremity ovate-conic; the spiral tongue long; the wings round and shortish, with the margins entire; the disk generally obscurely coloured, with a dark central dot; when at rest they are extended horizontally; the hind tibiæ are dilated in the males, and furnished with a long brush of hair; they are destitute of spurs, and those of the females have only one pair at the tips in some of the species, but two pairs in others; and the hind tarsi are in some species very short. From the structure of the feet Mr. Stephens divides the genus into two sections.

A. *Hind tibiæ of the females with one pair of spurs at the tips.*

SPECIES 1.—PTYCHOPODA DILUTARIA[w].—(Plate LXXII., Fig. 4.)—Measures 10 or 11 lines in expanse; fore wings whitish-buff, with a lutescent tinge, with a slender, repanded, slightly-fuscous fascia before the middle; a second, extending across the hind wings, also repanded and placed close to the ordinary dark spot; the margin of all the wings ashy, with four or five alternate buff and brownish undulated strigæ, and a row of black dots on the margin; hind wings marked as the fore ones. Common in woods and hedges, at the end of August.

[w] SYNONYMES.—*Phalæna dilutata*, Haworth; Hübner (?); Stephens.
Idæa reversaria, Treitschke; Duponchel, pl. 173, 3.

SPECIES 2.—PTYCHOPODA FIMBRIOLATA[x].—(Plate LXXII., Fig. 5.)—Measures 11 lines in expanse; "wings whitish; all with a minute, deep fuscous, central dot; a pale fuscous, nearly straight, central striga, and the posterior margin broadly deep fuscous, with a waved white striga traversing it; cilia fuscescent. Found in the neighbourhood of London, in June."— Stephens, l. c.

[x] SYNONYMES.—*Ptychopoda fimbriolata*, Stephens.
Phalæna dilutata, var. β, Haworth.

SPECIES 3.—PTYCHOPODA CINEREATA[y].—Measures 11 lines in expanse; wings cinereous, with a very obscure, common, central striga, and ordinary dot, fuscous; the posterior margin also irregularly fuscous. Taken in June, near London. This and the preceding may possibly be varieties of P. dilutaria.

[y] SYNONYME.—*Ptychpoda cinereata*, Stephens; Fabricius (?).

SPECIES 4.—PTYCHOPODA LIVIDATA[z].—(Plate LXXII., Fig. 6.)—Measures 9 or 10 lines in expanse, and has the wings pale ashy-buff, slightly irrorated with numerous brown atoms, and three small equidistant spots on the costa, from which often extend three brown strgæ, the middle one being most obscure; near the third are three or four minute, transverse, brown spots, partially surrounded with white towards the hinder margin, which occasionally terminate in an obsolete whitish striga, which runs to the costa; beyond these the margin is more or less brown; hind wings nearly similar; all the wings with the ordinary brown dot near the middle, and the margin dotted with black. A common species in woods and hedges, in June and July.

[z] SYNONYMES.—*Phalæna Geometra lividata*, Linnæus; Haworth; Stephens.
Phalæna scutata, Fabricius; Hübner, fig. 72.
Phalæna denudata, Borkhausen.

SPECIES 5.—PTYCHOPODA BISETATA[a].—(Plate LXXII., Fig. 8.)—Measures 10 lines in expanse; wings whitish-clay coloured; the anterior with the costa towards the base, and an indented striga of brown beyond the middle, and followed by a fascia composed of somewhat confluent dark spots, and a short waved striga next the anal angle, also occasionally with two anterior, very slender, evanescent, dusky strigæ preceding the ordinary dark central dot; hind wings with a subapical dusky striga far beyond the ordinary central dark dot; the apical margin with a row of brown dots. Taken in June, in the woods of Kent and elsewhere.

[a] SYNONYME.—*Geometra bisetata*, Hufnagle; Treitschke; Duponchel, 173-4; Stephens.

SPECIES 6.—PTYCHOPODA TRIGEMINATA[b].—(Plate LXXII., Fig. 7.)—Measures 10 lines in expanse; wings whitish clay-yellow; the base of the costa and a posterior fascia formed of three geminated, subconfluent, blackish spots, and occasionally with two almost evanescent, dusky strigæ preceding the ordinary dark central dot; hind wings immaculate, or with a submarginal dusky striga. Taken at the end of May, in hedges. Probably a variety of the preceding species.

[b] SYNONYMES.—*Phalæna trigeminata*, Haworth. *Geometra scutalaria*, Hübner.

B. *Hind tibiæ of the females with one pair of spurs near the middle, and a second pair at the apex.*

SPECIES 7.—PTYCHOPODA ORNATA[c].—(Plate LXXII., Fig. 9.)—Measures from 1 to 1⅛ inch in expanse; wings snow-white, scarcely clouded, with a black dot in the middle, and a moderately broad, elegant, apical border to all the wings, formed of grey, whitish, and brownish spots and strigæ, united together and edged within with black, through which runs an undulating white line; the apical margin with an interrupted black and brown line. This elegant species occurs in chalky places in Kent, and other places in the south of England, in July, and is far from rare.

[c] SYNONYMES.—*Geometra ornata*, Wien. Verz.; Hübner; Haworth; Stephens. | *Phalæna institata*, Hufnagle. *Geometra paludata*, Samouelle; Villars.

SPECIES 8.—PTYCHOPODA INCANATA[c].—(Plate LXXII., Fig. 10.)—Measures about 1 inch in expanse, and has the wings greyish-buff, powdered with brown, and with the ordinary black subcentral dot, and with obscure, dusky, waved strigæ: the first, which is much curved, is sometimes obsolete; the second is repanded beyond the dot; and the third is between it and the apical margin; beyond this is a nearly obsolete row of brown dots running across all the wings; and the margin itself has a row of dark somewhat triangular dots. Generally found on the coast, in Norfolk, Kent, Devonshire, etc., about the beginning of August.

GEOMETRA CONTIGUARIA, Hübner, Haworth, and our Pl. 76, Fig. 11, is regarded as a variety of the preceding, being rather larger, with paler wings, and more strongly marked and denticulated strigæ. It is found in the same localities.

[c] SYNONYMES.—*Phalæna Geometra incanata*, Linnæus; Haworth; Stephens.
Geometra immutaria, Hübner, nec Linnæus.

SPECIES 9.—PTYCHOPODA IMMUTATA[d].—(Plate LXXII., Figs. 12, 13.)—Measures 10 or 11 lines in expanse, with the wings cream coloured or whitish, with the small, dark, subcentral dot conspicuous, and with about five lutescent strigæ, nearly equidistant, slightly undulated; the posterior ones often nearly evanescent; the fringe generally dotted with black at the base. Taken in Norfolk and Huntingdonshire, in marshy places, about the beginning of July. The caterpillar is whitish, with the back purplish, dotted with black, and with red-brown lateral patches.

[d] SYNONYMES.—*Phalæna Geometra immutata*, Linnæus; Haworth; Stephens, nec Hübner.
Geometra sylvestraria, Hübner; Treitschke.

SPECIES 10.—PTYCHOPODA RUBRICATA[e].—(Plate LXXII., Fig. 14.)—Measures 11 lines in expanse, and has all the wings dark purplish-red; the fore ones with three, nearly equidistant, dark strigæ; the apical portion rather darker, and the hind ones with two dark strigæ. The antennæ of the males are strongly setose, appearing bipectinated. Taken at the beginning of August, flying in the North Foreland Meadow, Dover; also near York, but very rare.

[e] SYNONYME.—*Geometra rubricata*, Wien. Verz; Hübner; Stephens; Ill. Haust., 3, pl. 31, fig. 1; Curtis; Wood, fig. 722.

DESCRIPTION OF PLATE LXXIII.

INSECTS.—Fig. 1. Acidalia osseata (the dark cream wave).
„ Fig. 2. Acidalia—var. margine-punctata (the dotted bordered wave).
„ Fig. 3. Acidalia virgularia (the small dusty wave).
„ Fig. 4. Acidalia subsericeata (the satin wave).
„ Fig. 5. Acidalia aversata (the riband wave).
„ Fig. 6. Acidalia remutata (the false riband wave).
„ Fig. 7. Acidalia— var. inornata (the plain wave).
„ Fig. 8. Acidalia fumata (the smoky wave).
„ Fig. 9. Acidalia lactata (the pale cream wave).
„ Fig. 10. Acidalia—var. flos lactata (the cream wave).
„ Fig. 11. Pœcilophasia marginata (the clouded border). 12. Var. 13. Caterpillar.
„ Fig. 14. Chlorissa viridata (the small grass emerald).
„ Fig. 15. Chlorissa thymiaria (the common emerald). 16. Caterpillar.
„ Fig. 17 Chlorissa putataria (the little emerald).

INSECTS.—Fig. 18. Timandra imitaria (the small blood vein).
„ Fig. 19. Timandra variegata (the subangled wave).
„ Fig. 20. Timandra emutaria (the dusky wave).
„ Fig. 21. Macaria notata (the peacock). 22. Caterpillar.
„ Fig. 23. Macaria alternata (the sharp angled peacock).
„ Fig. 24. Macaria liturata (the tawny barred angle). 25. Caterpillar.
„ Fig. 26. Ania emarginata (the scolloped double line).
„ Fig. 27. Ennomos flexula (the beautiful hook tip).
„ Fig. 28. Macaria limbata (the bordered cheque).
„ Fig. 29. Macaria præatomata (the dingy angled).
„ Fig. 30. Macaria subrufata (the slender-shaped rufous).
„ Fig. 31. Macaria unipunctata (the white spot).

The whole of the insects figured in this plate are from the cabinet of Mr. Bentley. The caterpillars are from Hübner and Freyer.

H. N. H.

ACIDALIA, TREITSCHKE; CURTIS; BOISDUVAL. DOSYTHEA, PARS DUPONCHEL.

Mr. Stephens has separated, perhaps with too great minuteness, the following species from those of the preceding genus, with which they agree in the anomalous structure of the hind tibiæ, furnished with brushes of hair, and destitute of spurs, whilst those of the females have one or two pairs of spurs; as well as in the pale dull colouring of the wings, which are traversed by slight dusky strigæ, more or less liable to become obsolete. From the Ptychopodæ, however, they are generally distinguished by their more elongated fore wings, which have the apical margin without dark clouds.

SPECIES 1.—ACIDALIA OSSEATA[f].—(Plate LXXIII., Fig. 1.)—Measures $\frac{3}{4}$ inch in expanse; wings whitish-buff, with the subcentral, ordinary, dark, small dot, preceding which are two dark strigæ, most conspicuous on the costa of the fore wings, and beyond which are three darker, wavy, slender strigæ, common to all the wings, sometimes nearly obsolete (as in the variety Ph. subochreata, Steph.); the margin itself with a row of small, oblong, black dots. Common at the end of June, in hedges and woods.

[f] SYNONYMES.—*Phalæna osseata*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 723.
Ptychopoda subochreata, Stephens, Cat. (variety).

SPECIES 2.—ACIDALIA MARGINE-PUNCTATA[g].—(Plate LXXIII., Fig. 2.)—Possibly a variety of the preceding, from which it differs in being rather larger (measuring 10 lines in expanse), and being destitute of the ferruginous tinge on the costa of the fore wings, and with a distinct row of rounded black dots on the apical margin of all the wings. Taken in the New Forest.

[g] SYNONYME.—*Acidalia margine-punctata*, Stephens; Wood, fig. 724.

SPECIES 3.—ACIDALIA VIRGULARIA[h].—(Plate LXXIII., Fig. 3.)—Measures from 7 to 10 lines in expanse, and has the wings long and ashy-coloured, and thickly pulverose, with two oblique strigæ, one of which is rather angulated before, and the other in the middle of the wings; the latter running across the hind wings, and with a broadish somewhat brownish border to all the wings, with minute white clouds and black specks; the margin itself with small black dots. A very common and widely-dispersed species, taken about the beginning of July, in hedges.

[h] SYNONYME.—*Geometra virgularia*, Hübner; Haworth; Stephens; Wood, fig. 725.

SPECIES 4.—ACIDALIA SUBSERICEATA[i].—(Plate LXXIII., Fig. 4.)—Measures 11 lines in expanse; wings somewhat sericeous, pale whitish, with a greenish tinge, and five dusky undulating strigæ, placed at equal distances apart; all, except the first, running also across the hind wings; the central, ordinary, dark dot being occasionally obsolete; apical margins with a row of dusky dots. Taken at Darenth Wood, in Kent, in June.

[i] SYNONYME.—*Phalæna subsericeata*, Haworth; Stephens; Wood, fig. 726.

SPECIES 6.—ACIDALIA AVERSATA[j].—(Plate LXXIII., Fig. 5.)—Measures nearly 1¼ inch in expanse; wings whitish or reddish-ashy, thickly irrorated with brown atoms, with an evanescent brownish striga preceding, and another, extending across all the wings, beyond the broad brown fascia, which is somewhat undulated, and extends across all the wings; apical margin with a row of minute black dots. Very common in woods, in July and September.

[j] SYNONYME.—*Phalæna Geometra aversata*, Linnæus; Haworth; Hübner; Stephens; Wood, fig. 728.

SPECIES 6.—ACIDALIA DEGENERARIA[k].—Measures 13 lines in expanse; pale ochreous-brown; all the wings with a subcentral black dot; the fore ones with the costa red, and a reddish-brown fascia, rather before the middle; and between it and the apical margin are two parallel, sinuated, fuscous strigæ, and another subapical, almost indistinct; the outer portion of the red fascia and the strigæ carried across the hind wings; the margin itself with a brown line. A single specimen, taken by Mr. Curtis in the island of Portland, at the end of June. Having been omitted in the plate, a figure will be added in the Appendix.

[k] SYNONYME.—*Geometra degenerata*, Hübner; Curtis, Brit. Ent., pl. 384; Duponchel; Stephens.

SPECIES 7.—ACIDALIA REMUTATA[l].—(Plate LXXIII., Fig. 6.)—Measures nearly 1¼ inch in expanse, and has the wings whitish or reddish-ashy coloured and pulverose, with three equidistant, slightly undulated strigæ, variable in intensity; the two outer ones running across all the wings, and with a slender, interrupted, dark brown line along the apical margin, and a row of minute black dots at the base of the fringe. Very common in woods, in June and September. (Specimens of this insect having been reared from the same batch of eggs as A. aversata, it is most probable that it is only a variety of that species.)

[l] SYNONYME.—*Phalæna Geometra remutata*, Linnæus; Haworth; Stephens; Wood, fig. 729, but not of Hübner.

SPECIES 8.—ACIDALIA INORNATA[m].—(Plate LXXIII., Fig. 7.)—Measures nearly 1¼ inch in expanse; wings pale brownish-grey, nearly destitute of brown atoms, with three equidistant dusky strigæ, which are nearly evanescent, and of which the posterior is sometimes obsoletely geminated; the ordinary subcentral dark dot is distinct in all the wings, and the apical margin is destitute of the striga or dark dots of the preceding species, to which, however, this is very closely allied. Commonly taken in woods, especially those of Kent, in June and July.

[m] SYNONYMES.—*Phalæna inornata*, Haworth; Stephens; Curtis; Wood, fig. 727. | *Phalæna murinata?* Fabricius. *Idæa suffusata*, Treitschke.

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SPECIES 9.—ACIDALIA FULIGINATA[n].—Measures 13 or 14 lines in expanse; all the wings smoky-brown, with a darker striga, almost obsolete, running beyond the middle of the fore ones. Found in June, near London.

[n] SYNONYME.—*Phalæna fuliginata*, Haworth; Stephens.

SPECIES 10.—ACIDALIA FUMATA[o].—(Plate LXXIII., Fig. 8.)—Measures 13 or 14 lines in expanse; wings ashy, thickly irrorated with brown atoms, with three or four dusky strigæ, almost obsolete, the outer one followed by an obscure pale wave; the apical margin immaculate; the strigæ more distinctly marked in the female. Taken in the northern counties of England, and in different parts of Scotland, in June and July; also near Ashburton, Devon, by Messrs Chant and Bentley.

[o] SYNONYME.—*Acidalia fumata*, Curtis; Stephens; Wood, fig. 730.

SPECIES 11.—ACIDALIA LACTATA[p].—(Plate LXXIII., Fig. 9.)—Measures about 14 lines in expanse; wings pale buff-white; fore ones with a straight, oblique striga, preceding the ordinary dark dot, which is followed by a second striga (which also crosses the hind wings, and is scarcely waved; a third striga, more strongly marked, and much waved, is placed between this and the apical margin, and also crosses the hind wings; the apical margin generally with the ordinary series of small black dots. The variety *sublactata* has the basal striga obsolete; but the strigæ vary considerably in different specimens. Common in woods, in June.

[p] SYNONYMES.—*Phalæna lactata*, Haworth; Stephens; Wood, fig. 731.
Phalæna sublactata, Haworth (variety).

SPECIES 12.—ACIDALIA FLOSLACTATA[q].—(Plate LXXIII., Fig. 10.)—Measures 13 lines in expanse; wings cream-white, slightly atomose, with three or four considerably undulated darker strigæ crossing all the wings, and differently disposed to those in A. lactata; apical margin generally unspotted. Common in woods, in June.

[q] SYNONYMES.—*Phalæna floslactata*, Haworth; Stephens; Wood, fig. 732.
Geometra centrata, Fabricius (?).
Geometra remutaria, Hübner, but not of Linnæus.

SPECIES 13.—ACIDALIA PALLIDARIA[r].—Measures 1 inch in expanse; wings pale yellowish, the anterior with four brownish-yellow strigæ, and the hind ones with three, all the wings having the ordinary, subcentral, brown dot. Taken in Kent and Devonshire.

[r] SYNONYME.—*Phalæna pallidaria*, Wien. Verz.; Hübner; Curtis; Stephens; Wood, fig. 741.

PŒCILOPHASIA, STEPHENS. ABRAXAS, PARS CURTIS. MELANIPPE, PARS DUPONCHEL.

The common species which is the type of this genus is distinguished by its white wings, marked with large black blotches, and by its entire margins; the antennæ simple in both sexes; the palpi very short; the hind tibiæ are thickened, and slightly ciliated in the males, but having two pairs of short spurs. The caterpillar is long, slender, and naked.

SPECIES 1.—PŒCILOPHASIA MARGINATA[s].—(Plate LXXIII., Figs. 11, 12, 13.)—Measures from 1 inch to 13 lines in expanse; body black; wings white, fore ones with a large black blotch at the base of the costa, followed by another large costal spot, which is more or less extended in different specimens into a fascia across all the wings, the apical margin of all being irregularly black, which is, however, occasionally very much interrupted. The species is, indeed, one of the most variable in the family. The caterpillar is green, with the articulations yellow, and with slender, longitudinal, black markings. A very common species in woods, throughout the summer.

[s] SYNONYMES.—*Phalæna Geometra marginata*, Linnæus; Hübner; Donovan, 9, pl. 293, fig. 2; Stephens; Wood, fig. 733; Harris, Expos., pl. 6, fig. 6.
Phalæna staphyleata, Scopoli.
Geometra nævaria, Hübner (variety).
Phalæna navata, Haworth, Prod. (variety).
Geometra pollutaria, Hübner (variety).

CHLORISSA, Stephens. HIPPARCHUS and MACARIA, pars, Curtis.

The species of this genus are distinguished from the allied preceding groups by having the wings more or less tinged with green, and the posterior ones more or less angulated in the middle of the posterior margin; the palpi are slender, but porrected beyond the front of the head; the antennæ of the males are subpectinated, nearly to the tips in some species, but ciliated through their entire length in others; and the hind tibiæ of the males are more or less incrassated, and in some species furnished with only a pair of spurs at the tips, thus approaching the insects of the preceding genus.

Species 1.—Chlorissa viridata[t].—(Plate LXXIII., Fig. 14.)—Measures 10 or 11 lines in expanse; wings bluish-green, with an almost obsolete striga preceding, and another beyond the middle of the wings, the latter also extending across the hind wings; the fringe with a reddish tinge. Rare; taken in the New Forest and elsewhere, at the end of May and in June.

[t] Synonymes.—*Phalæna Geometra viridata*, Linnæus; Hübner; Albin, pl. 48, fig. 80, a—c; Stephens; Wood, fig. 734.

Geometra vernaria, Haworth (but not of Linnæus, which is figured in our pl. 60, f. 3; nor of Fabricius, which is our Chlorissa thymiaria).

Species 2.—Chlorissa cloraria, Hubner (?); Wood, fig. 735.—Under this name Mr. Stephens doubtingly describes a specimen, which he considers distinct from the preceding; measuring nine lines in expanse, and having all the wings pale green, with a single whitish striga placed behind the middle, fringe entirely green.

Species 3.—Chlorissa Thymiaria[u].—(Plate LXXIII., Figs. 15, 16.)—Measures from 9 to 14 lines in expanse; wings dull grass-green, with a flexuous, pale, whitish striga before, and another of the same colour much waved, also crossing the hind wings beyond the middle; fringe whitish with brown spots. Common in woods at the end of June. The caterpillar is slender, attenuated in front; green varied with dark patches on the back; marked with white dots, and with a brown head; it feeds on the oak, whitethorn, etc.

[u] Synonymes.—*Phalæna Geometra Thymiaria*, Linnæus; Albin, pl. 48, fig. 81, d—g; Harris, Aurelian, pl. 3; Haworth; Stephens; Wood, fig. 736.

Phalæna Geometra strigata, Villers.

Phalæna fimbriata, Hufnagle.

Geometra Æstivaria, Borkhausen; Hübner.

Phalæna vernaria, Fabricius; Donovan, 9, pl. 310 (but not of Linnæus).

Phalæna vernaria, Esper; Stephens, Cat. (variety).

Species 4.—Chlorissa putataria[v].—(Plate LXXIII., Fig. 17.)—This delicate species measures 10 or 11 lines in expanse; wings pale green, with two almost obsolete whitish strigæ running across the middle of the wings; the first less conspicuous on the latter, slightly incurved, and almost without undulation; but the second striga is undulated, fringe greenish. The green colour of the wings soon fades to a delicate white. Very common in woods at the end of May. This species differs from all the preceding, by having two pairs of spurs in the male tibiæ.

[v] Synonyme.—*Phalæna Geometra putataria*, Linnæus; Fabricius; Hübner; Haworth; Stephens; Wood, fig. 737.

TIMANDRA, Duponchel. MACARIA, pars, Curtis.

These insects have the hind wings angulated in the middle of the hind margin, like those of the last genus; from which, however, they differ, not only in the duller colours of their wings, but also in the diagonal fascia running across them; the antennæ of the males are slightly pectinated; the palpi are porrected; the fore wings acute at the tips; and the hind tarsi of the males are dilated, and destitute of spurs; the females having two pairs of those appendages to the same limbs.

SPECIES 1.—TIMANDRA IMITARIA[w].—(Plate LXXIII., Fig. 18.)—This delicate species measures 10 or 11 lines; wings of a pale reddish-clay colour, with an incurved striga before the ordinary brown dot, which is closely followed by a second stronger striga or rather clouded fascia, which runs across all the wings, but preceding the ordinary dot in the hind wings, and followed by another slender, dark, and more undulated striga; fringe red. A common and widely-dispersed species.

[w] SYNONYME.—*Geometra imitaria*, Hübner; Haworth; Stephens; Wood, fig. 738.

SPECIES 2.—TIMANDRA VARIEGATA[x].—(Plate LXXIII., Fig. 19.)—Measures 13 or 14 lines in expanse; wings whitish, irrorated, with cinerescent atoms, with two nearly evanescent strigæ across all the wings, and an oblique brown fascia rather beyond the middle, running across the ordinary dot of the hind wings; apical margin with an interrupted brown line. Rare, but widely dispersed. Found in June, in lanes near woods.

[x] SYNONYMES.—*Phalæna variegata*, Scopoli; Stephens; Wood, fig. 739.
Geometra strigillaria, Hübner; Haworth.

SPECIES 3.—TIMANDRA EMUTARIA[y].—(Plate LXXIII., Fig. 20.)—Measures 1 inch in expanse; wings pale buff tinged with red, and irrorated with brown atoms, all the wings having the ordinary subcentral dusky dot, which is followed by an oblique, central, obscurely red fascia; the apical margin with a row of small black dots. Taken in the New Forest in July.

[y] SYNONYMES.—*Geometra emutaria*, Hübner; Stephens; Wood, fig. 740.

TIMANDRA SUBROSEATA, Haworth, Stephens, which measures 1 inch in expanse, with the wings rosy-whitish, thickly irrorated with brown atoms, with an ashy striga running from near the tip of the fore wings to the middle of the anal margin of the hind ones; followed in the fore ones by an oblique row of about four very minute black dots; and which is also found in the New Forest and in Norfolk in July; is probably a variety of the last-described species.

MACARIA, CURTIS. PHIBOLIA, DUPONCHEL.

This is another group, with irregular hind feet, the tibiæ of the males being dilated, and furnished with a fascicle of hairs, capable of being concealed within a suture down the inside; the antennæ in the same sex are serrated beneath; the palpi slightly projecting; the fore wings slightly falcate at the tips, and the hind ones angulated in the middle of the hind margin; the disk without diagonal strigæ. The caterpillars are moderately slender, slightly attenuated in the thoracic segments; and the chrysalis is angular, and enclosed in a web amongst the leaves.

SPECIES 1.—MACARIA NOTATA[z].—(Plate LXXIII., Figs. 21, 22,)—Measures from 13 to 15 lines in expanse; wings greyish-white and atomose, the notch near the tips of the fore ones edged with dark brown; the costa with four reddish or chestnut marks, the last much the largest; and from which extend four ashy, nearly obsolete strigæ crossing all the wings, the last of which forms a fascia, which in the fore wings bears in the middle a group of five small black dots, the hind wings with the ordinary black dot. The caterpillar is green, with a row of dark dorsal spots, and the sides darker; head reddish. It feeds on the willow; and the moth appears in the summer months in woods, especially those of Kent and Surrey, but it is not common.

[z] SYNONYME.—*Phalæna Geometra notata*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 742.

SPECIES 2.—MACARIA ALTERNATA[a].—(Plate LXXIII., Fig. 23.)—Measures from 13 to 15 lines in expanse, and very closely resembles the preceding; the wings are ashy-white and atomose, with three fuscous strigæ; on

the costa towards the apex, is the brown spot as in the preceding, but behind this is a larger cleft spot not formed, as in it, of five small black dots; the fore wings have the tips more acute, and the hind ones more angulated. Taken, according to Mr. Haworth, with the preceding, but rare.

[a] Synonymes.—*Geometra alternata*, Wien. Verz.; Hübner (lituraria); Stephens; Wood, fig. 743.
Phalæna prænotata, Haworth.

Species 3.—Macaria liturata[b].—(Plate LXXIII., Figs. 24, 25.)—Measures from 15 to 17 lines in expanse; wings ashy, with a lilac tinge; the anterior scarcely falcate at the tip; the costa with four dark dots, the last largest and chestnut-coloured, the others are carried transversely, in slender nearly obsolete strigæ, dotted with black, across the wings; beyond the third is an ochraceous fascia; hind wings slightly angulated; apical margin of all the wings with a row of black dots. Taken in July, in fir plantations in Hampshire; also in Kent and the northern counties.

[b] Synonymes.—*Phalæna Geometra liturata*, Linnæus; Hübner (alternaria); Haworth; Curtis, Brit. Ent., pl. 132; Stephens; Wood, fig. 745. *Phalæna igneata*, Hufnagle.

Species 4.—Macaria præatomata[c].—(Plate LXXIII., Fig. 29.)—Measures 15 lines in expanse; fore wings but slightly emarginate at the tip, whitish-ashy, thickly irrorated with brown scales, the anterior with three dusky, somewhat obsolete, waved strigæ, the outer one furcate at the costa, or rather with the costa marked towards the tip, with a short, transverse, dark patch; apical margin dusky; hind wings somewhat strigose, and rather acutely angulated. Described by Mr. Haworth, from a specimen in Francillon's British collection, now belonging to Mr. Bentley.

[c] Synonyme.—*Phalæna præatomata*, Haworth; Stephens; Wood, fig. 746.

Species 5.—Macaria subrufata[d].—(Plate LXXIII., Fig. 30.)—Measures 15 lines in expanse; wings reddish, with slender dusky strigæ. Size of M. notata—"The edges of the acute upper wings seem to have been dentated or angled; but the specimen from whence this description was made is too much injured to be certain of it."—Haworth. Also described from a specimen in Francillon's collection, now belonging to Mr. Bentley.

[d] Synonyme.—*Phalæna subrufata*, Haworth; Stephens; Wood, fig. 744.

Species 6.—Macaria unipunctata[e].—(Plate LXXIII., Fig. 31.)—Measures 16 lines in expanse; wings reddish-buff, irrorated with brown, and strongly dentated; fore ones with two slender, curved, dark strigæ, the centre of the wing between them bearing an obscure brown fascia; another, less distinct, runs parallel with the apical margin, bearing a conspicuous white dot near the apex; hind wings somewhat caudated, with two strigæ. Also from a specimen in Francillon's collection, but now belonging to Mr. Stephens; its locality, as well as those of the two preceding species, being unknown.

[e] Synonyme.—*Phalæna unipunctata*, Haworth; Stephens, Ill. H., 3, pl. 31, fig. 3; Wood, fig. 747.

ANIA, Stephens.

The wings in this genus are rather short, the fore ones crossed by entire strigæ; and with the apex acute, the middle of the apical margin prominent, and the middle of the posterior margin of the hind wing angulated; the palpi are short and scarcely porrected; the antennæ of the males subserrated, and the hind tibiæ of the males dilated and destitute of spurs, the female having the same limbs furnished with only a single pair of spurs. The caterpillar is attenuated in front, slightly pilose, and not tubercled.

SPECIES 1.—ANIA EMARGINATA[f].—(Plate LXXIII., Fig. 26.)—Measures 10 or 11 lines in expanse; wings pale fulvous in the male, reddish in the female, with two somewhat repanded brownish strigæ, between which is a black dot; the first striga is incurved, the second crossing the hind wings much beyond the middle; and between these is often a brownish fascia, especially in the females; a third nearly obsolete striga runs along the apical margin of the wings. The female is smaller and darker coloured than the male. Taken in July and August, in hedges and woods, and rather common. The caterpillar is ochreous, with a brown dorsal line; it feeds on the bindweed.

[f] SYNONYMES.—*Phalæna Geometra emarginata*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 749.
Phalæna demandata, Fabricius.
Phalæna quadripunctata, Donovan, 14, pl. 493, fig. 3.
Phalæna erosata, Hufnagle.
Phalæna dimidiata, Haworth (female).
Phalæna rumigerata, Donovan, 14, pl. 493, fig. 2 (female).

SPECIES 2.—ANIA LIMBATA[g].—(Plate LXXIII., Fig. 28.)—Measures 13 lines in expanse; wings pale and angulated, and reticulated with ferruginous, and with a broad, apical, ferruginous border. Taken in Scotland. In Mr. Chant's collection.

[g] SYNONYME.—*Phalæna limbata*, Haworth; Stephens; Wood, fig. 748.

ENNOMOS, TREITSCHKE. FALCARIA, HAWORTH. AVENTIA, DUPONCHEL, BDV.

As the Phalæna flexula of Fabricius was given by Treitschke as the type of his genus Ennomos (although the major part of the genus was composed of our Thorn moths), Mr. Stephens retained the generic name for that particular species; other late authors have, however, given the name of Ennomos to the Thorns, and a distinct new generic name to P. flexula. I have, however, followed in Mr. Stephens's steps, as they are in accordance with the principle I have so repeatedly insisted upon in my writings. The antennæ in the males are slightly pubescent; the palpi rather long and prominent; the wings expanded in repose, the fore ones deeply emarginate near the tip, and the hind ones rounded; the hind tibiæ are incrassated, but furnished with two pairs of long spurs. The caterpillar is sublacertine, depressed, fimbriated at the sides, and furnished with a dorsal tubercle; it feeds on lichens.

SPECIES 1.—ENNOMOS FLEXULA[h].—(Plate LXXIII., Fig. 27.)—Measures about 1¼ inch in expanse; ashy-grey, thickly irrorated with brown scales, the fore ones with two whitish flexuous strigæ, one before and the other beyond the middle, bordered with brown on each side, and having two brown dots between them; hind wings paler, with a whitish striga, similarly bordered, and a central brown dot. Caterpillar green, with the neck, a raised tubercle, the acuminated tail, head, and feet all reddish. The perfect insect appears in July, in woods, but is far from common.

[h] SYNONYMES.—*Phalæna flexula*, Fabricius; Hübner; Haworth; Stephens; Wood, fig. 750.
Phalæna Geometra sinuata, Villers.

DESCRIPTION OF PLATE LXXIV.

INSECTS.—Fig. 1. Platypteryx lacertula (the scallop hook tip). 2. Caterpillar.
„ Fig. 3. Platypteryx,—var. Cultraria (the pale scallop hook tip).
„ Fig. 4. Drepana falcataria (the pebble hook tip). 5 Caterpillar.
„ Fig. 6. Drepana hamula (the oak hook tip).
„ Fig. 7. Drepana unguicula (the barred hook tip).
„ Fig. 8. Cilix compressa (the Chinese character).
„ Fig. 9. Hypena proboscidalis (the spout eggar likeness). 10. Caterpillar.
„ Fig. 11. Hypena obesalis (the pinion snout).

INSECTS.—Fig. 12. Hypena rostralis (the buttoned snout). 13. Caterpillar.
„ Fig. 14. Hypena palpalis (the dark snout).
„ Fig. 15. Hypena crassalis (the beautiful snout).
„ Fig. 16. Macrochilia cribralis (the dotted fan foot).
„ Fig. 17. Pechipogon barbalis (the common fan-foot). 18. Caterpillar.
„ Fig. 19. Paracolax derivalis (the clay fan-foot).
„ Fig. 20. Paracolax tarsicrinalis (the fan-foot).
„ Fig. 21. Paracolax nemoralis (the small fan-foot).

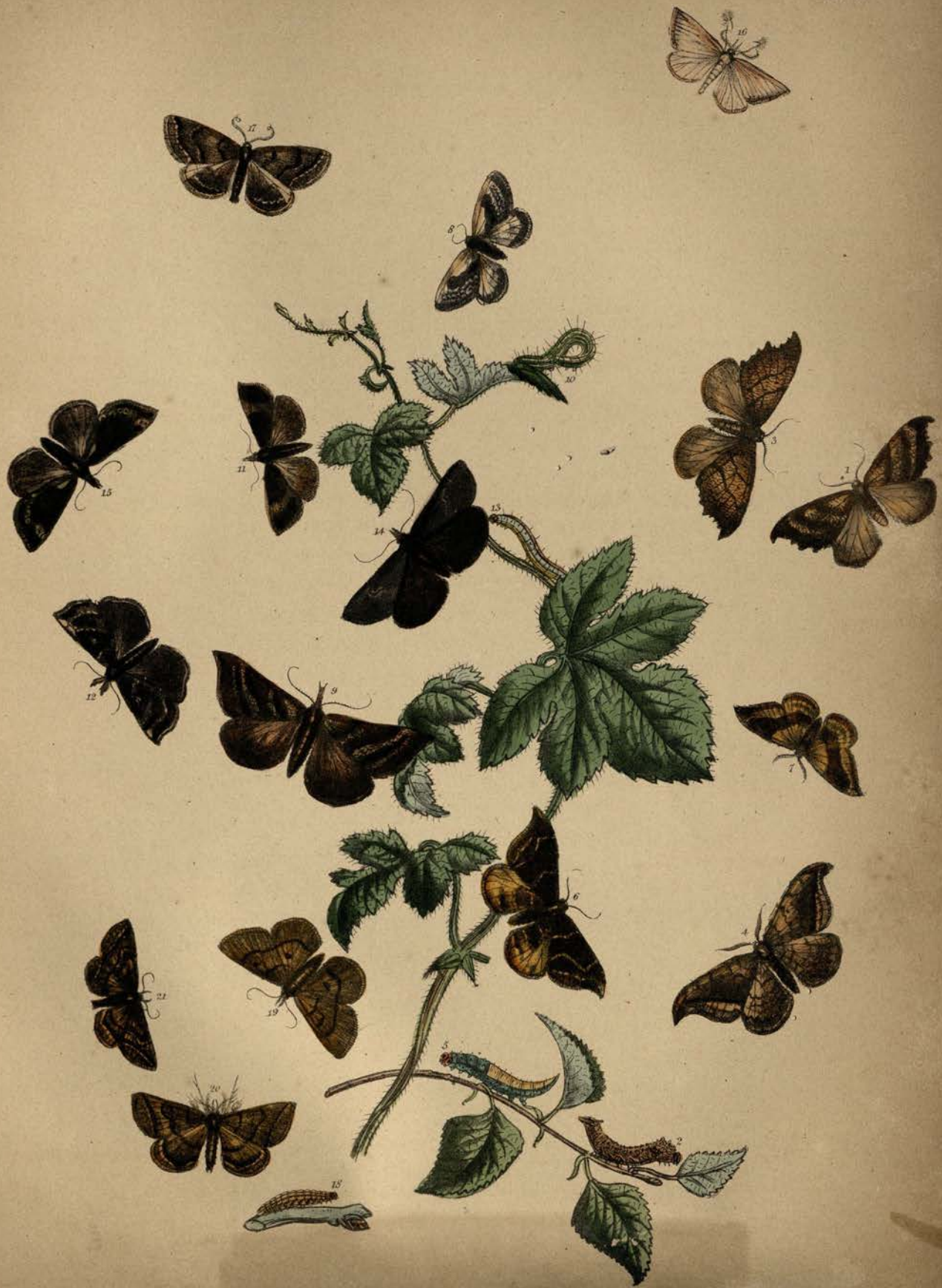
The whole of the insects in this plate are from the cabinet of Mr. Bentley; the caterpillars are from Hübner and Freyer. H. N. H.

FAMILY PLATYPTERICIDÆ, STEPHENS.

The insects represented in the first eight figures of Plate 74 are anomalous in their relations, resulting chiefly from the structure of their lacertine larvæ: hence, Latreille unites them with Cerura, into a group which he calls Aposura (Règne An., 2nd ed., v., p, 406); Mr. Curtis suggests a relation to the Atlas moth, not only from the falcate form of the wings of some of the species, but also from the structure, in those species, of the spiral tongue, which is short and fleshy, as in such Bombycidæ which possess that organ; whilst Mr. Stephens states that although the larvæ resemble in their singular structure those of the typical Notodontidæ, yet, from the habit of the perfect insects, the breadth and tenuity of their wings, their short legs, etc., he conceives them to be as nearly related to the terminal Geometridæ, the larvæ of one genus of which, Ennomos, is not very dissimilar to those of the present group, which he regards as a family, under the name of Platypterícidæ. There is another character, moreover, by which this latter relationship is effected, namely, the existence of only a single pair of spurs to the posterior tibiæ, in the true genus Platypteryx. I could wish, however, to call attention to the peculiarity of the manner in which the veins of the fore wings are disposed, by which they are separated from all the true Geometridæ: the great median vein having, in addition to the three ordinary branches, a fourth, arising close upon the origin of the third, above which the transverse vein is very oblique; in other words, the longitudinal vein which ordinarily arises from the middle or front portion of the transverse vein. This character neither prevails amongst the Bombycidæ, Notodontidæ, nor Geometridæ. A knowledge of the structure and metamorphoses of exotic lepidopterous forms will alone enable us to solve the question of the true situation of this interesting group. Will not the imago state of Saccophora and the larva of Schizura, two genera of North American moths, described by Mr. E. Doubleday, in the "Entomologist," assist in determining the relations of these insects? I have therefore provisionally adopted Mr. Stephens's views in giving them as a distinct family. Mr. Haworth formed them into a separate group, named Falcaria. Mr. Henry Doubleday places them between Limacodes and Cerura.

PLATYPTÉRYX, LASPEYRES.

The wings in this group are denticulated, and thickly marked with short, slender, transverse, dark lines; the antennæ bipectinated in both sexes; the spiral tongue almost rudimental; the palpi very minute; the four posterior tibiæ with only one pair of spurs. The caterpillars have fourteen feet, the two anal ones wanting, and the body attenuated to a point behind, and with tubercles on the back of the anterior segments.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SPECIES 1.—PLATYPTERYX LACERTINARIA[i].—(Plate LXXIV., Figs. 1, 2.)—Varies from 1 to 1⅓ inch in expanse; wings fulvous-buff; hind ones paler, with numerous, irregularly dusky, transverse lineolæ on the fore ones, which also have two oblique dark strigæ, between which is a dark dot; the region of these strigæ and the extremity of the fore wings darker: hind wings sometimes with a slight streak on the inner margin. The caterpillar is reddish-brown, with darker markings. It feeds on birch-trees; and the moth occurs in birch plantations from March to June, and is not very uncommon.

[i] SYNONYMES.—*Phalæna Geometra lacertinaria*, Linnæus; Donovan, 7, pl. 251, fig. 2.
Geometra lacertula, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 751.
Phalæna Scincula; Hübner, ♂.
Geometra dentaria, Thunberg.
Falcaria curvula, Haworth (variety).

SPECIES 2.—PLATYPTERYX CULTRARIA[j].—(Plate LXXIV., Fig. 3.)—Differs from the preceding in being rather larger, with the fore wings less strongly dentate; the oblique strigæ parallel and rusty-brown; the lineolæ almost or quite obsolete; hind wings pale. Taken near London, and Monks Wood, Hunts; Dorsetshire, etc., in July.

[j] SYNONYMES.—*Platypteryx cultraria*, Leach; Stephens; Wood, fig. 732.
Falcaria lacertula β, Haworth.

DREPANA, LASPEYRES. PLATYPTERYX, PARS, OCHSENHEIMER, CURTIS.

The entire, but falcated, fore wings of these insects separate them from the preceding; and the males have the antennæ more deeply bipectinated than in the former; but in D. falcataria those organs are slightly bipectinated in the female; the spiral tongue is very short, and the hind tibiæ have only a single pair of spurs, thus approximating to the former; whereas, in the other species the female antennæ are simple, the hind tibiæ armed with two pairs of spurs, and the spiral tongue more developed.

SPECIES 1.—DREPANA FALCATARIA[k].—(Plate LXXIV., Figs. 4, 5.)—Measures from 1¼ to 1⅓ inch in expanse; wings pale ochraceous-buff, with five or six slender, very waved strigæ running across all of them, and having a dark blotch, and two dots in the middle of the fore ones, beyond which is a chestnut-brown, very oblique fascia, terminating above in a grey marginal patch. The caterpillar has the head brownish-yellow, with the mouth, sides of the body, anterior segments, and feet green; the back, paler or reddish-brown, with a lateral line of pale red. It feeds on the birch, alder, trembling poplar, sallow, and oak; and the moth appears in May, June, and August, in woods, and is not uncommon.

[k] SYNONYMES.—*Phalæna Geometra falcataria*, Linnæus; Stephens; Wood, fig. 753; Curtis, Brit. Ent., pl. 555.
Phalæna falcula, Wien. Verz.; Hübner; Haworth.

SPECIES 2.—DREPANA HAMULA[l].—(Plate LXXIV., Fig. 6.)—Measures from 15 to 17 lines in expanse, and has the wings fulvous; the fore ones richer brown, with two much bent, pale luteous strigæ, between which are two dark dots towards the costa; hind margin paler, with a dark patch towards the apex; hind wings darker towards the inner margin, with several pale strigæ, and a dark central dot. The caterpillar is dull flesh coloured, with the head, anterior segments, and belly (extending to the tail) greenish-brown. It feeds on the oak; and the moth occurs in May, June, and July, in oak and birch woods, but is uncommon.

[l] SYNONYMES.—*Bombyx hamula*, Wien. Verz.; Hübner; Albin, pl. 65, fig. a—d; Wilkes, pl. 30; Haworth; Stephens; Wood, fig. 754.
Phalæna falcata, Fabricius; Stewart; Turton.
Phalæna binaria, Hufnagle.
Phalæna sicula, Sepp., vol. ii., tab. 16.
Phalæna lacertinaria, the brown hook-tip, Harris, Aurelian, pl. 41, f. a, b.

SPECIES 3.—DREPANA UNCULA[m] (?).—It appears very doubtful how far the true B. uncula of Hübner is a British species, since the old specimen described by Mr. Haworth does not accord therewith; and Mr. Curtis states that he was not aware of any British specimen of the Hubnerian insect existing in our cabinets. The following is Mr. Stephens's description of specimens given to him by Mr. Haworth, taken, as is stated, in the metropolitan district:—"Expansion 15 lines; wings tawny-yellowish; anterior, with two paler approximating streaks, between which are two small, nearly united, dusky points of similar size; at the apex of the hinder margin is a dusky patch; posterior wings paler in the male, with three pale luteous streaks. Female with all the wings paler, and the markings very indistinct."

[m] SYNONYMES.—*Bombyx uncula*, Hübner (?).
Drepana uncula, Stephens; Wood, fig. 755.

SPECIES 4.—DREPANA UNGUICULA[n].—(Plate LXXIV., Fig. 7.)—Measures 14 or 15 lines in expanse; fore wings not so much hooked as in the preceding, dark fulvous, with two paler streaks, being more widely apart towards the costa; the space between them darker brown, with a brown spot towards the costæ; the apical margin dusky, with a pale striga; hind wings similarly coloured to the fore ones. The caterpillar is dusky-brown, with the back red. It feeds on the oak, beech, and blackthorn; and the moth appears in May and June, in Richmond Park, Epping and New Forests, Dorsetshire, etc.

[n] SYNONYMES.—*Bombyx unguicula*, Hübner; Haworth; Stephens; Wood, fig. 756; Godart, 140, 4.
Bombyx sicula, Esper.

SPECIES 5.—DREPANA FASCIATA[o].—Measures 17 lines in expanse; wings brownish-lutescent; the anterior with two oblique brown strigæ, incurved towards the costa; the hind wings with a single striga. Thus described by Haworth, from a specimen of unknown locality, in the collection of the late Mr. Swainson.

[o] SYNONYMES.—*Drepana fasciata*, Stephens; Curtis.
Falcaria uncula, Haworth.

CILIX, LEACH. EUCLEA, HÜBNER.

The pretty little insect which is the type of this genus differs from all the other species of this group, in having the extremity of the fore wings not hooked, and the apical margin rounded; the palpi are short and slender; the antennæ of the males are slightly bipectinated, and those of the females subserrated; the hind tibiæ have two pairs of spurs. The caterpillar is lacertine in its form. The moths, during repose, sit with their wings carried vertically, instead of extending horizontally, as they are in the species of Drepana. Platypteryx lacertinaria sits, however, with its wings deflexed, like the roof of a house,—Lyonnet, Posth. Rech., pl. 35.

SPECIES 1.—CILIX COMPRESSA[a].—(Plate LXXIV., Fig. 8.)—Measures from 10 to 14 lines in expanse; wings pearly-white; fore ones with a large central blotch of greyish-brown, extending to the hind margin, where it is darkest, and tinged with several leaden-coloured scales; the veins of the wing in this patch being silvery; apical margin with two rows of grey lunules, preceded by a dusky shade; hind wings with the margin dusky. The caterpillar is reddish-brown, with the back gibbose, and the tail acuminated. It feeds on blackthorn; and the moth occurs throughout the summer, and is a very common species.

[p] SYNONYMES.—*Bombyx compressa*, Fabricius; Albin, pl. 65, fig. e—h; Donovan, 7, pl. 239, fig. 2; Stephens; Wood, fig. 757.
Bombyx spinula, Wien. Verz.; Hübner; Haworth.
Geometra modesta, Naturforscher, St., xiii., pl. 3, fig. 4.
Phalæna glaucata, Scopoli.

FAMILY PYRALIDÆ, LEACH. CRAMBITES, LATREILLE.

The species of this family are of comparatively small or moderate size, having the body slender and elongated; the antennæ simple, or but slightly ciliated in the males; the labial palpi often very much elongated and porrected, but sometimes recurved, and those of the maxillæ occasionally developed; the

maxillæ, or spiral tongue, generally of moderate length, although in Hydrocampa very small, and in Aglossa nearly obsolete; the head sometimes furnished with a pair of ocelli; the thorax of moderate size, not crested; the wings also of moderate size, and generally placed in a triangle during repose; the fore wings often angulated at the tip; the legs ordinarily very long, especially the fore pair; with the coxæ nearly as long as the femora, thus indicating the great activity of movement which these insects so frequently exhibit. The males of some species have the fore legs singularly ornamented with brushes of hairs, capable of expansion, whence the species have received the name of *fan-footed* moths; and the anterior tarsi of the males of some species of Pyralis are obsolete. There is considerable diversity in the preparatory stages of these insects; in general, the caterpillars are long and slightly hairy, having generally only three, but sometimes four, pairs of ventral feet. They are never geometrical in their movements, nor radicivorous in their habits, nor are they densely clothed with hairs. Some of the genera, as Nola, Simaëthis, etc., are anomalous. The family, as restricted in the following pages, corresponds with Linnæus's twelve or fourteen last species of the genus Geometra, and with the whole of his Pyralides, which he charaeterises "alis conniventibus in figuram deltoideam forcipatam."—Syst. Nat., vol. ii., p. 809.

The species of Hypena and its allies are the largest in the family, and, frequent hedges and low herbage; they are of dull colours, and the larvæ are well distinguished by having only three pairs of ventral feet, and the chrysalis enclosed in a slight cocoon, in a leaf rolled up by the larvæ*. The species of Aglossa, on the other hand, are domestic insects, their larvæ feeding upon butter, grease, and other similar substances; whilst Pyralis farinalis, Lin., feeds on flour, meal, etc. The species of Pyrausta are gaily-coloured insects, which revel in the sunshine, hovering over grassy spots, but immediately settling as soon as the sun is overcast; whilst those of Hydrocampa and its allies, distinguished by their prettily-marked wings (whence they have derived the name of China-marks), frequent aquatic plants, upon which the larvæ feed, inhabiting moveable cases, formed of portions of the plants; the sides of the body of the larvæ in some species which reside beneath the surface of the water being furnished with elongated filaments (as in some of the Phryganeidæ), employed in extracting the oxygen from the water.

In the "Zoologist," p. 774, is rather a doubtful account, to the effect that Margaritia prunalis is parasitic upon Phlogophora meticulosa, by Mr. W. Turner, who *thinks* he observed its caterpillar issuing from the chrysalis of the latter insect, and, *if he mistake not*, the parasite, having changed to a chrysalis, came forth as Margaritia prunalis. This fact has been partially confirmed by a statement made to me in Dublin, in October, 1853, by Mr. Hogan, a friend of whom having endeavoured to rear a caterpillar of Lasiocampa Quercus discovered, on opening the chrysalis, that it was entirely empty, with the exception of a small dead moth, apparently Margaritia hyalinalis.—[J. O. W., October, 1853.]

HYPENA, Schrank.

The insects of this genus are at once distinguished by their greatly elongated and squamose palpi; the short terminal joint of which is generally bent upwards; the antennæ are slender and setaceous; the spiral tongue as long as the antennæ; the wings are of large size and trigonate, with the tips acute and generally rather falcate; the posterior tibiæ are furnished with two pairs of spurs; and the fore wings in some species are furnished in the middle with small elevated tufts of scales.

Species 1.—Hypena proboscidalis.—(Plate LXXIV., Figs. 9, 10.)—Measures from 1¾ to 2 inches in expanse; fore wings grey-brown, with an incurved dark striga near the base, and a central, nearly straight, but

* See Lyonnet, Posth. Research., pl. 33, in which the transformations of several species are figured.

oblique fascia across the middle, between which and the apical margin is a repanded striga, not extending to the costa, generally bearing several whitish dots on its outside, and with an oblique dark brown line near the apex; hind wings brown. The caterpillar is pale green, with a few whitish dots, and slightly hairy. It feeds on nettles; and the moth appears throughout the latter part of the summer, and is very common.

[q] Synonymes.—*Phalæna Pyralis proboscidalis*, Linnæus; Hübner; Fabricius; Haworth; Harris, Aurelian, pl. 31, fig. f—h; Sepp., vol. ii., pl. 2; Stephens; Wood, fig. 758.
Phalæna rostralis, Berkenhout.
Phalæna ensalis, Fabricius.

Species 2.—Hypena rostralis[r].—(Plate LXXIV., Figs. 12, 13.)—Measures 13 or 14 lines in expanse; fore wings pale greyish-brown; the basal half being darker coloured, followed by a pale grey fascia, running rather obliquely across the middle; costa with transverse dark streaks; centre of the wing, towards the costa, with a short jet-black line, terminating within in a small round patch of elevated scales, with a pale edge, and behind in a small black bifid tuft; apical portion of the wing clouded with paler and darker shades, and with an oblique dark dash near the apex. Sometimes the wings are almost of a uniform dull brown, with the black markings alone distinct; hind wings paler, and immaculate. The caterpillar is pale green, with the head and a dorsal line of red, and a white stripe on each side. It feeds on the nettle and hop, and the moth generally appears from May to July; but I took very dark-coloured specimens in my residence at Hammersmith, on Christmas Day last, and at the beginning of the present month of January (1844). In 1827, Mr. Stephens and myself met with it in great numbers in lanes near Ripley.

Hypena vittalis, Haworth (wings acute, subretuse, pale grey, rather clouded with brown, and with a broad, costal, yellowish vitta), is probably a variety of the last-described species.

[r] Synonyme.—*Phalæna Pyr. rostralis*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 761.

Species 3.—Hypena obesalis[s].—(Plate LXXIV., Fig. 11.)—Measures 14 lines in expanse; fore wings acute, subretuse, greyish-ashy, with a large black costal patch, attenuated towards the base, and placed in front of the slender, black, elevated streak; on the apical margin a row of pale obscure dots; and near the apex an oblique dark streak. A single specimen, obtained by Mr. Haworth from Francillon's cabinet, is now in the collection of Mr. Chant.

[s] Synonymes.—*Pyralis obesalis*, Treitschke(?); Stephens; Wood, fig. 759.
Pyralis crassalis, Hübner; Haworth.

Species 4.—Hypena palpalis[t].—(Plate LXXIV., Fig. 14.)—Measures 14 lines in expanse; fore wings dark coloured, with a very flexuous striga before the middle; a second elevated transverse one in the middle, outwardly towards the costa marked with a large but nearly obsolete tooth; between this and the apical margin is a third, more obsolete striga, formed of obsoletely elevated darker dots; along the margin itself is often a row of pale obsolete dots; hind wings pitchy and shining. A single specimen of this species was also obtained by Mr. Haworth from Francillon's collection, and is now in Mr. Chant's cabinet. The locality of both is unknown.

[t] Synonyme.—*Pyralis palpalis*, Fabricius; Haworth; Hübner; Stephens; Wood, fig. 760.

Obs.—The three preceding species (forming the restricted genus Hypena of Hübner) have small elevated tufts of scales on the wings.

Species 5.—Hypena (Bomolocha, Hübner) crassalis[u].—(Plate LXXIV., Fig. 15.)—Varies from 15 to 17 lines in expanse; fore wings with the apical margin rounded, the tip not falcate; a large dark brown patch extends from the base to beyond the middle of the wing, angulated on the outer edge, and bearing two black

dots on its disk; hinder and apical margins fleshy-buff, the latter with a submarginal row of eight black dots, and a subapical, oblique, dark dash; hind wings pale brown. Taken formerly at Westerham, and in 1827, in plenty, near Spitchweek, Devonshire, by Messrs. Chant and Bentley.

[u] SYNONYMES.—*Crambus crassalis*, Fabricius; Treitschke; Curtis, Brit. Ent., pl. 288; Stephens; Wood, fig. 762, but not of Hubner nor of Haworth.

Pyralis achatalis, Hubner; Haworth.

MACROCHILA, HÜBNER, STEPHENS. PYRALIS, PARS CURTIS. HERMINIA, LATREILLE.

The insects of this and the three following groups have the labial palpi very long and porrected obliquely; the antennæ of the males bipectinated; the wings when at rest forming a triangle; the fore feet in the males with singular brushes of hair; the caterpillars with six or eight ventral feet. In the present group the wings are abbreviated, nearly of uniform colour, without transverse markings, and the males are destitute of anterior tarsi. It frequents fens.

SPECIES 1.—MACROCHILA CRIBRALIS[v].—(Plate LXXIV., Fig. 16.)—Measures 13 or 14 lines in expanse; wings whitish-ochre, paler on the disk, a small dot in the centre, and one or two oblique lines of dots beyond it of black, more or less obsolete; hind wings paler, with a submarginal row of similar dots. Taken in the fens of Huntingdonshire, about the end of July.

[v] SYNONYME.—*Pyralis cribalis*, Hubner; Curtis, Brit. Ent., pl. 527; Stephens; Wood, fig. 763.

PECHIPOGON, HÜBNER, STEPHENS. PYRALIS, PARS CURTIS.

The palpi are porrected horizontally, and very long, with the terminal joint recurved; the antennæ bipectinated nearly to the tip; the fore wings elongate triangular, with oblique streaks; the fore feet of the males with fans; the tarsi slender; the larvæ have only three pairs of ventral legs. It frequents woods.

SPECIES 1.—PECHIPOGON BARBALIS[w].—(Plate LXXIV., Figs. 17, 18.)—Measures from 11 to 15 lines in expanse; fore wings ashy-brown, with three equidistant, dusky strigæ, the first incurved before, and the second very much bent a little beyond the middle; the third nearly straight and subapical; hind wings similarly strigose. The caterpillar is robust, and of a red-brown colour, with darker longitudinal lines. It feeds on the oak and birch; and the moth appears throughout the summer, in woods, and is a common insect. I have a very pale specimen with all the markings nearly obsolete.

[w] SYNONYMES.—*Phalæna Pyralis barbalis*, Linnæus; Albin, pl. 74, fig. e—h; Harris, Aurelian, pl. 43, fig. 1—t; Harris, Exposition, pl. 6, fig. 2; Fabricius; Haworth; Godart, pl. 1, fig. 5; Stephens; Wood, fig. 764. *Pyralis pectitalis*, Hubner.

PARACOLAX, HÜBNER, STEPHENS. PYRALIS, PARS CURTIS.

This genus differs from the two preceding, in having the long middle joint of the palpi curved and ascending, and the terminal joint recurved; the antennæ slightly bipectinated in the males; the head tufted; the fore wings slightly elongated; the disk with dark streaks; the anterior tibiæ in the males mostly furnished with brushes of hairs and incrassated, varying in the different species, and the fore tarsi occasionally wanting.

SPECIES 1.—PARACOLAX DERIVALIS[x].—(Plate LXXIV., Fig. 19.)—Measures 14 or 15 lines in expanse; wings fulvous-buff, all with a dark central dot; anterior with two dark incurved, and hind ones with a single

transverse, curved, dark striga; the fore tibiæ of the males have only a short brush of hairs. Taken in June and August, in the woods of Kent, and also in Devonshire, but rare.

[x] SYNONYME.—*Pyralis derivalis*, Hübner; Haworth; Godart, vol. viii., pl. 1, fig. 2; Stephens, Ill. Haust., 4, pl. 33, fig. 2; Wood, fig. 765.

SPECIES 2.—PARACOLAX TARSICRINALIS.—(Plate LXXIV., Fig. 20.)—Measures from 14 to 16 lines in expanse; wings ochre-brown; anterior with three strigæ, the first incurved before, and the second much bent beyond the middle, the third straight towards the apical margin; hind wings with two dusky strigæ, edged on the outside with whitish; fore tibiæ of the males short, dilated, with long pale fascicles of hair terminating in black tufts; antennæ in the same sex incrassated in the middle, forming a process on the inside. The caterpillar feeds on Trifolium hispanicum; and the moth is taken about the end of June, in woods.

[y] SYNONYME.—*Pyralis tarsicrinalis*, Hübner; Haworth; Stephens; Wood, fig. 767.

SPECIES 3.—PARACOLAX NEMORALIS[z].—(Plate LXXIV., Fig. 21.)—Measures 13 or 14 lines in expanse; wings dirty reddish-buff; the anterior with a *straight* striga before, and a much-curved slender one beyond the middle, between which is a short, curved, dark streak, followed by a darker cloud; near the apex is a third nearly straight dark striga; hind wings dusky and slightly strigose. The anterior tarsi are wanting in the males. The caterpillar feeds on the golden saxifrage, nettle, and sorrel; and the moth appears in June, in woods, and is far from common.

[z] SYNONYMES.—*Pyralie nemoralis*, Fabricius; Haworth; Stephens; Godart, pl. 1, fig. 4; Wood, fig. 766.
Pyralis grisealis, Wien. Verz.; Hübner.

DESCRIPTION OF PLATE LXXV.

INSECTS.—Fig. 1. Œthia emortualis (the olive crescent).
2. Caterpillar.
„ Fig. 3. Colobochylia salicalis (the lesser bell).
„ Fig. 4. Synaphe angustalis (the small snout).
„ Fig. 5. Cledeobia albistrigalis (the white line snout).
„ Fig. 6. Cledeobia costæstrigalis (the dark line snout).
„ Fig. 7. Camptylochila undulatis (the waved tabby).
„ Fig. 8. Camptylochila bistrigalis (the twin-striped tabby).
„ Fig. 9. Aglossa pinguinalis (the large tabby).
„ Fig. 10. Aglossa cupreolatus (the small tabby).
„ Fig. 11. Aglossa dimidiatus (the tea tabby).

INSECTS.—Fig. 12. Aglossa Streatfeildii (Streatfeild's tabby).
„ Fig. 13. Pyralis farinalis (the meal moth).
„ Fig. 14. Pyralis glaucinalis (the double striped).
„ Fig. 15. Pyralis pictalis (the painted meal moth).
„ Fig. 16. Hypsopygia costalis (the gold fringe).
„ Fig. 17. Agrotera flammealis (the rosy-flounced).

Œthia Emortualis is from the figure of Godart and Duponchel. Camptylochila bistrigalis from Stephens's figure; Aglossa Streatfeildii from Curtis's figure. The others are all from the cabinet of Mr. Bentley. The caterpillar is from Hübner. H. N. H.

ŒTHIA, HÜBNER, STEPHENS. PYRALIS, PARS CURTIS.

The antennæ of the males are slightly pectinated; the palpi short, pilose, and slightly deflexed; the forehead not tufted; the wings rather short, with the apical margin of the anterior pair rounded and entire, of pale colours, with paler strigæ.

SPECIES 1.—ŒTHIA EMORTUALIS[a].—(Plate LXXV., Figs. 1, 2.)—Measures 1 inch in expanse; wings olive-buff, with a yellowish tinge; the antennæ with two pale strigæ, edged within with a darker margin, and with a central lunate streak; hind wings with a single pale striga, similarly edged with a slender darker margin. The caterpillar is yellowish-brown, with a darker line down the back, and some black dots on the sides; it feeds on the oak; and the moth appears in May. Mr. Stephens's specimen is from Devonshire.

[a] SYNONYME.—*Pyralis emortualis*, Hübner; Haworth; Godart and Dup., pl. 1, fig. 4; Stephens; Wood, fig. 768.

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COLOBOCHYLIA, Hübner, Stephens (Illustr.) MADOPA, Stephens (Cat.)

The palpi are short, rather slender, with the terminal joint minute and porrected; the antennæ slightly bipectinated in the males; the fore wings short, subtriangular, traversed by oblique pale strigæ, which do not cross the hind wings; the legs slender and simple; and the larvæ have only three pairs of ventral feet.

Species 1.—Colobochylia salicalis[b].—(Plate LXXV., Fig. 3.)—Measures 12 or 13 lines in expanse; fore wings of a brownish-leaden colour, with two straight, nearly parallel, pale yellowish strigæ between the base and middle of the wings, and a third one towards the apex, which is bent outwards and extends to the tip; hind wings pale ashy, with a dusky mark near the anal angle. The caterpillar is slender, and of a green colour; it feeds on willows; and the moth appears about the end of June. It is very rare, and has been taken near Bexley and Charlton.

[b] Synonyme.—*Pyralis salicalis*, Wien. Verz.; Fabricius; Hübner; Haworth; Stephens; Wood, fig. 769.

SYNAPHE, Hübner.

The species of this and the next genus differ from the preceding in their elongated bodies and wings; but in this the labial palpi are very long, hairy, and slightly deflexed, with the terminal joint nearly half the length of the preceding; the maxillary palpi are distinct, and slightly ascending; the male antennæ are bipectinated; the fore wings with a broad, central, dark fascia; the legs are slender and simple. In several of these respects the genus therefore approaches the Crambi.

Species 1.—Synaphe angustalis[c].—(Plate LXXV., Fig. 4.)—Measures 1 inch in expanse; fore wings fulvous or reddish-brown, with a central dusky fascia, narrowed behind, with a paler, hind, flexuous margin; the costa dotted with whitish oblong spots, placed obliquely; and in the middle of the fascia (which is often unsolid) is an ordinary dark dot; the hind wings brown, with reddish fringe. The female measures only 11 lines in expanse, and has the wings somewhat luteous coloured, with the central fascia darker. The caterpillar feeds on the marsh willow-herb; and the moth is taken in the woods of the south of England, in July, but is very rare.

[c] Synonymes.—*Pyralis angustalis*, Hübner; Haworth; Stephens; Wood, fig. 770.
Pyralis curtalis, Wien. Verz.
Pyralis Bombycalis, Hübner; Haworth (female).
Pyralis erigalis, Fabricius.

CLEDEOBIA, Stephens.

Although agreeing in general habit with the last-described insect, the two species of which this genus is composed are destitute of the maxillary palpi, the labial ones being long, porrected horizontally, broad, and densely squamose; the antennæ of the males strongly ciliated, and the legs slender and simple.

Species 1.—Cledeobia albistrigatus[d].—(Plate LXXV., Fig. 5.)—Measures 10 lines in expanse; wings pale brown; the fore ones with a broad, central, darker bar, with black margins, with the ordinary dark dot; beyond the middle of this bar towards the costa, an obscure, undulated, white, subapical striga, and a marginal row of dark dots; hind wings without spots. Taken in Kent (near Darenth), Norfolk, and Devonshire.

[d] Synonyme.—*Crambus albistrigatus*, Haworth; Stephens; Wood, fig. 771.

Species 2.—Cledeobia costæstrigalis[e].—(Plate LXXV., Fig. 6.)—Measures 10 lines in expanse; wings pale ashy-brown; the costa with a broad darker patch beyond the middle, terminated by a paler oblique

bar, leaving the extremity of the wing brownish, with a marginal row of dark dots; the disk with two very slender, dentated, black lines, and a black patch; hind wings darker on the inner margin. Taken near Whittlesea Mere, and in Norfolk.

[e] SYNONYME.—*Cledeobia costæstrigalis*, Stephens, Ill.; Wood, fig. 772.

CAMPTYLOCHILA, STEPHENS. PYRALIS, PARS, HAWORTH.

The antennæ are slender, and slightly bipectinated in the males; the labial palpi are long, divaricating, and recurved; the terminal joint slender, and nearly as long as the preceding; the wings are entire, and rather broad, with the apical margin rounded, and the disk strigose; the body rather robust.

SPECIES 1.—CAMPTYLOCHILA UNDULALIS[f].—(Plate LXXV., Fig. 7.)—Measures 14 lines in expanse; wings pale ashy-brown, and sprinkled with darker atoms; the anterior with two slender, wavy, brown lines before the middle, and with a much more dentate one beyond, followed by a paler space and a darker cloud, terminating in a fourth dentated striga; the margin with black dots; hind wings similarly strigose. Very rare. Locality unknown.

[f] SYNONYME.—*Camptylochila undulalis*, Stephens, Ill.; Wood, fig. 773.

SPECIES 2.—CAMPTYLOCHILA BISTRIGALIS[g].—(Plate LXXV., Fig. 8.)—Measures 1¼ inch in expanse; fore wings rich purplish-brown, with a slightly-curved, dull, luteous striga near the base; a lunate spot in the middle; a waved striga beyond the middle, and a subapical one, much angulated, near the posterior margin; hind wings brown, with an obscure, pale, waved striga near the anal angle. Very rare. Locality unknown.

[g] SYNONYME.—*Camptylochila bistrigalis*, Stephens, Ill., vol. iv., pl. 33, fig. 3; Wood, fig. 774

AGLOSSA, LATREILLE. CRAMBUS, PARS, HAWORTH.

The antennæ in the males are bipectinated; the labial palpi projecting considerably in front of the head; the terminal joint slender, and half as long as the preceding; the maxillary palpi slender, but distinct; the spiral tongue almost rudimental; the wings shining, broad, entire, with the apical margin rounded. The caterpillars have four pairs of ventral feet.

SPECIES 1.—AGLOSSA PINGUINALIS[h].—(Plate LXXV., Fig. 9.)—Measures from 13 to 19 lines in expanse; fore wings ashy, darkly pulverose, with a broad, obscure, dark striga near the base, followed by a narrower one, most distinct on the costa, and a central dark dot; beyond this are two very much waved, obscure, dark strigæ, and the margin is dotted with black; hind wings plain, or obsoletely bistrigose. The caterpillar is dull brown and shining. It feeds on oleaginous matter; and the moth appears at the end of the summer, and is very common. The variety described by Mr. Haworth as distinct is smaller and more uniformly coloured, especially on the hind wings.

[h] SYNONYMES.—*Phalæna Pyralis pinguinalis*, Linnæus; Hübner; Godart; Stephens; Wood, fig. 775.
Crambus pinguinatus, Haworth.
Crambus pinguiculatus, Haworth (variety).

SPECIES 2.—AGLOSSA CUPREALIS[i].—(Plate LXXV., Fig. 10.)—Measures from 9 to 14 lines in expanse; wings narrower than in the preceding, purplish-coppery-brown, with the base and apical portion, in certain lights, paler coloured; two flexuous strigæ, the first before the middle, and the second very much angulated both towards

the apical and inner angles, of a paler colour; between these strigæ is a double, circular, pale line; hind wings paler with a slender dusky margin, and obscurely strigose. A widely-dispersed but not very common species.

[i] Synonymes.—*Pyralis cuprealis*, Hübner; Godart and Duponchel; Curtis; Stephens; Wood, fig. 776.
Pyralis cupreolata, Haworth.

Species 3.—Aglossa Streatfeildii[j].—(Plate LXXV., Fig. 12.)—Measures 14 lines in expanse; wings lurid ochre, pulverose; the fore ones with an angulated brown bar at the base, and a broad apical margin of the same colour; the veins paler, and a dot on the centre, towards the costa; the margin itself with a row of black dots; hind wings rather paler at the base. A single specimen, taken at Compton Bishop, at the foot of the Mendip Hills, Somerset, is in the cabinet of Mr. Curtis.

[j] Synonyme.—*Aglossa Streatfeildii*, Curtis, Brit. Ent., pl. 455; Stephens; Wood, fig. 777.

Species 4.—Aglossa dimidiata[k].—(Plate LXXV., Fig. 11.)—Measures from 10 to 14 lines in expanse; wings rather narrow, ashy, with a purplish glossy tinge, clouded with about five black nebulæ; the costa dark, with paler dots; hind wings pale brown. Taken in the warehouses of the East India Company, the larva feeding on the tea in the chest; but Mr. Haworth states, that what "truly fixes the insect as a British species is, that it is never found in any of the chests except such as have become cracked and damaged from prior causes;" it is, however, rejected by Curtis and Stephens from the native lists, its food not being indigenous.

[k] Synonyme.—*Crambus dimidiatus*, Haworth; Stephens; Wood, pl. 54, D. Br. Sp., fig. 67.

PYRALIS, Linnæus, Stephens. ASOPIA, Treitschke, Curtis.

The antennæ are long and pubescent beneath in the males; the palpi are short, the labial ones curved upwards with a short terminal joint, and the maxillary ones slender and porrected; the spiral tongue long; the wings rather elongated, and when closed form a long triangle; the disk varied with lively hues, and paler strigæ. The caterpillars have sixteen feet.

Species 1.—Pyralis farinalis[l].—(Plate LXXV., Fig. 13.)—Measures from 1 to 1¼ inch in expanse; fore wings fulvous-brown, with a purple-brown patch at the base, edged with white, and a much curved, slender, sub-apical, whitish striga, beyond which the wing is purple-brown; hind wings pale brown, with two pale, very much waved strigæ, the space between which is darker, and some dark marginal dots. Taken in and about houses, in July and August; the caterpillar feeding on meal, flour, etc. The perfect insect sits with the extremity of the body bent considerably upwards.

[l] Synonyme.—*Phalæna Pyralis farinalis*, Linnæus; Hübner; Haworth; Godart and Dup., Stephens; Wood, fig. 778.

Species 2.—Pyralis Pictalis[m].—(Plate LXXV., Fig. 15.)—Measures 10 lines in expanse; fore wings dull lead coloured at the base, a broad chestnut-white bar across the middle, with the margins slightly waved and edged with white, a dark dot in the centre, and the extremities of the wings pale, castaneous, tinged with a lead colour; hind wings similarly coloured, but with the central fascia narrow and much sinuated. A single specimen taken in Poplar, near London, in July, in the cabinet of Mr. Robertson.

[m] Synonyme.—*Asopia pictalis*, Curtis, Brit. Ent., pl. 503; Stephens; Wood, fig. 779.

Species 3.—Pyralis marginatus[n].—Measures 1¼ inch in expanse; wings brownish and thickly irrorated with a much incurved dark striga at the base, edged with white, and a broader fascia beyond the middle, dark

bar, leaving the extremity of the wing brownish, with a marginal row of dark dots; the disk with two very slender, dentated, black lines, and a black patch; hind wings darker on the inner margin. Taken near Whittlesea Mere, and in Norfolk.

[e] Synonyme.—*Cledeobia costæstrigalis*, Stephens, Ill.; Wood, fig. 772.

CAMPTYLOCHILA, Stephens. PYRALIS, pars, Haworth.

The antennæ are slender, and slightly bipectinated in the males; the labial palpi are long, divaricating, and recurved; the terminal joint slender, and nearly as long as the preceding; the wings are entire, and rather broad, with the apical margin rounded, and the disk strigose; the body rather robust.

Species 1.—Camptylochila undulalis[f].—(Plate LXXV., Fig. 7.)—Measures 14 lines in expanse; wings pale ashy-brown, and sprinkled with darker atoms; the anterior with two slender, wavy, brown lines before the middle, and with a much more dentate one beyond, followed by a paler space and a darker cloud, terminating in a fourth dentated striga; the margin with black dots; hind wings similarly strigose. Very rare. Locality unknown.

[f] Synonyme.—*Camptylochila undulalis*, Stephens, Ill.; Wood, fig. 773.

Species 2.—Camptylochila bistrigalis[g].—(Plate LXXV., Fig. 8.)—Measures 1¼ inch in expanse; fore wings rich purplish-brown, with a slightly-curved, dull, luteous striga near the base; a lunate spot in the middle; a waved striga beyond the middle, and a subapical one, much angulated, near the posterior margin; hind wings brown, with an obscure, pale, waved striga near the anal angle. Very rare. Locality unknown.

[g] Synonyme.—*Camptylochila bistrigalis*, Stephens, Ill., vol. iv., pl. 33, fig. 3; Wood, fig. 774

AGLOSSA, Latreille. CRAMBUS, pars, Haworth.

The antennæ in the males are bipectinated; the labial palpi projecting considerably in front of the head; the terminal joint slender, and half as long as the preceding; the maxillary palpi slender, but distinct; the spiral tongue almost rudimental; the wings shining, broad, entire, with the apical margin rounded. The caterpillars have four pairs of ventral feet.

Species 1.—Aglossa pinguinalis[h].—(Plate LXXV., Fig. 9.)—Measures from 13 to 19 lines in expanse; fore wings ashy, darkly pulverose, with a broad, obscure, dark striga near the base, followed by a narrower one, most distinct on the costa, and a central dark dot; beyond this are two very much waved, obscure, dark strigæ, and the margin is dotted with black; hind wings plain, or obsoletely bistrigose. The caterpillar is dull brown and shining. It feeds on oleaginous matter; and the moth appears at the end of the summer, and is very common. The variety described by Mr. Haworth as distinct is smaller and more uniformly coloured, especially on the hind wings.

[h] Synonymes.—*Phalæna Pyralis pinguinalis*, Linnæus; Hübner; Godart; Stephens; Wood, fig. 775. | *Crambus pinguinatus*, Haworth. *Crambus pinguiculatus*, Haworth (variety).

Species 2.—Aglossa cuprealis[i].—(Plate LXXV., Fig. 10.)—Measures from 9 to 14 lines in expanse; wings narrower than in the preceding, purplish-coppery-brown, with the base and apical portion, in certain lights, paler coloured; two flexuous strigæ, the first before the middle, and the second very much angulated both towards

the apical and inner angles, of a paler colour; between these strigæ is a double, circular, pale line; hind wings paler with a slender dusky margin, and obscurely strigose. A widely-dispersed but not very common species.

[i] Synonymes.—*Pyralis cuprealis*, Hübner; Godart and Duponchel; Curtis; Stephens; Wood, fig. 776.
Pyralis cupreolata, Haworth.

Species 3.—Aglossa Streatfeildii[j].—(Plate LXXV., Fig. 12.)—Measures 14 lines in expanse; wings lurid ochre, pulverose; the fore ones with an angulated brown bar at the base, and a broad apical margin of the same colour; the veins paler, and a dot on the centre, towards the costa; the margin itself with a row of black dots; hind wings rather paler at the base. A single specimen, taken at Compton Bishop, at the foot of the Mendip Hills, Somerset, is in the cabinet of Mr. Curtis.

[j] Synonyme.—*Aglossa Streatfeildii*, Curtis, Brit. Ent., pl. 455; Stephens; Wood, fig. 777.

Species 4.—Aglossa dimidiata[k].—(Plate LXXV., Fig. 11.)—Measures from 10 to 14 lines in expanse; wings rather narrow, ashy, with a purplish glossy tinge, clouded with about five black nebulæ; the costa dark, with paler dots; hind wings pale brown. Taken in the warehouses of the East India Company, the larva feeding on the tea in the chest; but Mr. Haworth states, that what "truly fixes the insect as a British species is, that it is never found in any of the chests except such as have become cracked and damaged from prior causes;" it is, however, rejected by Curtis and Stephens from the native lists, its food not being indigenous.

[k] Synonyme.—*Crambus dimidiatus*, Haworth; Stephens; Wood, pl. 54, D. Br. Sp., fig. 67.

PYRALIS, Linnæus, Stephens. ASOPIA, Treitschke, Curtis.

The antennæ are long and pubescent beneath in the males; the palpi are short, the labial ones curved upwards with a short terminal joint, and the maxillary ones slender and porrected; the spiral tongue long; the wings rather elongated, and when closed form a long triangle; the disk varied with lively hues, and paler strigæ. The caterpillars have sixteen feet.

Species 1.—Pyralis farinalis[l].—(Plate LXXV., Fig. 13.)—Measures from 1 to 1¼ inch in expanse; fore wings fulvous-brown, with a purple-brown patch at the base, edged with white, and a much curved, slender, subapical, whitish striga, beyond which the wing is purple-brown; hind wings pale brown, with two pale, very much waved strigæ, the space between which is darker, and some dark marginal dots. Taken in and about houses, in July and August; the caterpillar feeding on meal, flour, etc. The perfect insect sits with the extremity of the body bent considerably upwards.

[l] Synonyme.—*Phalæna Pyralis farinalis*, Linnæus; Hübner; Haworth; Godart and Dup., Stephens; Wood, fig. 778.

Species 2.—Pyralis Pictalis[m].—(Plate LXXV., Fig. 15.)—Measures 10 lines in expanse; fore wings dull lead coloured at the base, a broad chestnut-white bar across the middle, with the margins slightly waved and edged with white, a dark dot in the centre, and the extremities of the wings pale, castaneous, tinged with a lead colour; hind wings similarly coloured, but with the central fascia narrow and much sinuated. A single specimen taken in Poplar, near London, in July, in the cabinet of Mr. Robertson.

[m] Synonyme.—*Asopia pictalis*, Curtis, Brit. Ent., pl. 503; Stephens; Wood, fig. 779.

Species 3.—Pyralis marginatus[n].—Measures 1¼ inch in expanse; wings brownish and thickly irrorated with a much incurved dark striga at the base, edged with white, and a broader fascia beyond the middle, dark

brown edged with white, the inner margin curved, the outer parallel with the apical margin of the wings; hind wings pale brown. Taken near Barnstaple by Mr. Raddon, but very rare.

[n] Synonyme.—*Crambus marginatus*, Haworth; Stephens; Curtis; Wood, pl. 54, D. Br. Sp., fig. 68.

Species 4.—Pyralis glaucinalis[o].—(Plate LXXV., Fig. 14.)—Measures from 1 to 1¼ inch in expanse; fore wings glossy liver-coloured-brown towards the costa, with a red tinge, which is marked with several very minute buff dots; and with two slender, pale, fulvous, nearly straight strigæ, one before and the other beyond the middle; hind wings pale brown, with two slender whitish strigæ. Taken in many parts of the country in the neighbourhood of houses. The palpi are in this species incurved, and the terminal joint is not exposed. (Euclita, Hübner).

[o] Synonymes.—*Phalæna Pyralis glaucinalis*, Linnæus; Haworth; Fabricius; Stephens; Wood, fig. 780.
Pyralis nitidalis, Hübner.

HYPSOPYGIA, Hübner, Stephens. ASOPIA, pars, Curtis.

The antennæ are slender and ciliated beneath in the males; the palpi short and ascending, with the terminal joint not concealed; the fore wings elongate-triangular; the wings entire and glossy, and the fringe and costal spots of a golden colour.

Species 1.—Hypsopygia costalis[p].—(Plate LXXV., Fig. 16.)—Measures 8 or 10 lines in expanse; wings purplish-red, with two slender strigæ of golden colour, which terminate on the costa in large spots; apical margin and fringe also golden colour. The caterpillar feeds on the poplar; and the moth appears in July and August, in gardens throughout the metropolitan district, but is rare.

[p] Synonymes.—*Phalæna costalis*, Fabricius; Haworth; Stephens; Wood, fig. 781.
Pyralis fimbrialis, Hübner; Godart.

AGROTERA, Schrank, Stephens. ASOPIA, pars, Curtis.

The antennæ are ciliated beneath in the males; the palpi short, recurved, and close together in front of the face; the terminal joint not concealed; the fore wings elongate-triangular, with the tip slightly falcate, and the abdomen and feet much elongated, in which respect it approaches the genus Hydrocampa.

Species 1.—Agrotera flammealis[q].—(Plate LXXV., Fig. 17.)—Measures from 8 to 10 lines; wings buff, with a rosy-purple tinge, especially beyond the middle; costa of the fore wings dotted with whitish, a nearly obsolete striga before, and a broader duplicated subapical one, between which is a dark dot on the disk; hind wings with two dusky strigæ across the middle, the space between them paler; fringe of the fore wings near the tip white. The caterpillar feeds on the privet; and the moth appears from the end of June to the beginning of July, in woods and heaths.

Synonyme.—*Pyralis flammealis*, Hübner; Haworth; Stephens; Wood, fig. 782.

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DESCRIPTION OF PLATE LXXVI.

INSECTS.—Fig. 1. Simaëthis Fabriciana (the autumn nettle-tap).
„ Fig. 2. Simaëthis pariana (the double barred nettle-tap). 3. The Caterpillar. 4. The Cocoon.
„ Fig. 5. Simaëthis lutosa (the early nettle-tap).
„ Fig. 6. Simaëthis Mylleràna (Myller's nettle-tap).
„ Fig. 7. Simaëthis punctosa (the narrow silver-dotted).
„ Fig. 8. Anania octomaculata (the white spot).
„ Fig. 9. Ennychia anguinalis (the wavy-barred sable).
„ Fig. 10. Ennychia cingulata (the silver-barred sable).
„ Fig. 11. Ennychia rufo-fascialis (the flounced).
„ Fig. 12. Pyrausta purpuralis (the crimson and gold).
„ Fig. 13. Pyrausta punicealis (the purple and gold). 14. The Caterpillar.
„ Fig. 15. Pyrausta ostrinalis (the scarce purple and gold).
„ Fig. 16. Pyrausta porphyrialis (the porphyry).
„ Fig. 17. Pyrausta cespitalis (the straw-barred).
„ Fig. 18. Pyrausta sordidalis (the dingy straw-barred).
„ Fig. 19. Diasemia literalis (the lettered China mark).

INSECTS.—Fig. 20. Hydrocampa potamogata (the brown China mark).
„ Fig. 21. Hydrocampa Nymphæata (the beautiful China mark). 22. The Caterpillar. 23. The Caterpillar in its sheath or case.
„ Fig. 24. Cataclysta lemnata (the small China mark). 25. The Female.
„ Fig. 26. Paraponyx stratiotata (the ringed China mark).
„ Fig. 27. Phlyctoenia sambucalis (the garden China mark). 28. The Caterpillar.
„ Fig. 29. Eudioptis lucernalis (the transparent China mark)
„ Fig. 30. Nomophila hybridalis (the rush veneer).

The whole of the insects in this plate, with the exception of S. Pariana, from a continental specimen in the British Museum, are from the cabinet of Mr. Bentley. The Caterpillars are from Hübner, with the exception of that of Pariana, which is from Fischer. H. N. H.

SIMAËTHIS, LEACH. ASOPIA, PARS, TREITSCHKE.

The antennæ are strongly ciliated in the males; the palpi porrected obliquely, with the tips straight, and the terminal joint distinct; the maxillary palpi not developed; the body short, but not robust; the wings are short and broad, and much clouded; when at rest they nearly form a triangle; and the legs are short. Their transformations are unknown; and it is doubtful if the present be the natural locality of the genus. In general form it approaches the Tortricidæ.

SPECIES 1.—SIMAËTHIS FABRICIANA[r].—(Plate LXXVI., Fig. 1.)—Measures 6 lines in expanse; wings brown, with numerous ashy clouds, forming obscure fasciæ, with a pale yellowish, waved, very slender striga beyond the middle; the apical portion of the wing with a golden tinge: the fringe with whitish and black patches; hind wings with a golden tinge towards the margin, and with a short, pale yellow striga on the inner margin.

[r] SYNONYMES.—*Phalæna Tortrix Fabriciana*, Linnæus; Haworth; Curtis; Stephens; Wood, fig. 783.
Phalæna Tortrix Urticana, Wien. Verz.; Hübner.
Phalæna Tinea Oxyacanthella, Linnæus; Haworth.
Simaëthis dentata, Leach; Hübner.
Asopia alternalis, Treitschke.

SPECIES 2.—SIMAËTHIS PARIANA[s].—(Plate LXXVI., Figs. 2, 4.)—Measures about 5 lines in expanse; wings brown, the anterior with an ashy central fascia edged with two blackish strigæ; the outer are undulating; hind wings with a faint whitish, submarginal striga; fringe black and white; not uncommon. Taken in June, in different parts of the country. The caterpillar is green, with minute black dots, and a brown head.

[s] SYNONYME.—*Phalæna Tortrix pariana*, Linnæus; Haworth; Stephens; Wood, fig. 784.

SPECIES 3.—SIMAËTHIS LUTOSA[t].—(Plate LXXVI., Fig. 5.)—Measures 5 lines in expanse; fore wings chestnut-brown, with darker undulating clouds, and with a broad, ashy bar beyond the middle, in which is a slender, brown, waved striga; costa dotted with white; hind wings brown; fringe dark coloured. Taken in the woods of the south of England, in March and June.

[t] SYNONYMES.—*Anthophila lutosa*, Haworth; Stephens; Wood, fig. 785.
Tortrix pariana, Hübner.

SPECIES 4.—SYMAËTHIS MYLLERANA[u].—(Plate LXXVI.. Fig. 6.)—Measures 5 lines in expanse; fore wings brown, with a large, pale, atomose patch in the middle of the disk towards the inner margin; the costa with three white spots, and the disk spotted with metallic dots, some of which form an interrupted striga towards the apical margin; hind wings brown, with a slender, white, abbreviated striga, and some minute white dots. Taken in various parts of the south of England, especially in Devonshire and Dorsetshire, on plants, in June and in the autumn. The palpi in this and the next species are fasciculate-squamose.

[u] SYNONYME.—*Pyralis Myllerana*, Fabricius; Haworth; Curtis, Brit. Ent., pl. 320; Stephens; Wood, fig. 786.

SPECIES 5.—SIMAËTHIS PUNCTOSA[v].—Plate LXXVI., Fig. 7.)—Measures 5 lines in expanse; fore wings somewhat wedge-shaped, with the tip obliquely truncate, brownish; the disk irrorated with minute coppery scales; costa dotted with white; fringe white, in front and behind dusky; hind wings ashy-brown, with an abbreviated whitish striga. Taken in Sussex and Dorsetshire, in August.

[v] SYNONYME.—*Anthopila punctosa*, Haworth; Stephens; Wood, fig. 787.

ANANIA, HÜBNER, STEPHENS. PYRAUSTA, PARS, CURTIS.

The antennæ are long, slender, and simple; the palpi not quite so long as the head; porrected like a beak and densely squamose; the maxillary palpi small; the body elongate; the wings forming a triangle in repose; the fore ones elongate-triangular, and all of black colour with large white patches: the middle tibiæ in one sex are considerably thickened, and the spurs to the hind legs are greatly elongated, indicating (as I have also observed to be the case in very active genera of other orders*) a great activity and peculiarity of motion.

SPECIES 1.—ANANIA OCTOMACULATA[w].—(Plate LXXVI., Fig. 8.)—Measures 9 or 10 lines in expanse; black; sides of thorax yellow; abdomen annulated with white; wings with eight white patches of nearly equal size. Taken in the woods of Kent, and elsewhere, in June and August, but not common.

[w] SYNONYMES.—*Geometra octomaculata*, Linnæus (Mantissa); Harris, Aurelian, pl. 27, f. p; Stephens; Wood, fig. 797.
Phalæna atralis, Fab.; Donov., 8, pl. 266, fig. 4; Haworth; Curtis.
Pyralis guttalis, Wien. Verz.; Hübner.
Noctua trigutta, Esper.

ENNYCHIA, TREITSCHKE. PYRAUSTA, PARS, CURTIS.

These insects are very closely allied to the last, differing chiefly in the rather more elongated palpi, and shorter wings, which are of black colours with white fasciæ or strigæ; and the middle feet, especially the femora are much elongated. Like the last-described genus, the species fly in the bright sunbeams in grassy places.

SPECIES 1.—ENNYCHIA ANGUINALIS[x].—(Plate LXXVI., Fig. 9.)—Measures 6 or 7 lines in expanse; wings black, all with an undulated white striga beyond the middle, and the base slightly but irregularly maculated with the same colour. Taken in the woods of Kent and Middlesex.

[x] SYNONYME.—*Pyralis anguinalis*, Hübner; Haworth; Stephens; Wood, fig. 789.

SPECIES 2.—ENNYCHIA ANGULATA[y].—(Plate LXXVI., Fig. 10.)—Measures from 6 to 8 lines in expanse; wings black, all with a straight white fascia beyond the middle; fore wings more acute than in the preceding species. Rare: taken in June, in Devonshire, and near Edinburgh. I have met with it in the Isle of Wight in August.

[y] SYNONYME.—*Pyralis angulata*, Linnæus; Haworth; Hübner; Stephens; Curtis, Brit. Ent., pl. 128; Wood, fig. 788.

* *E. g.*, Orchesia in Coleoptera, and Platyura in Diptera.

SPECIES 3.—ENNYCHIA RUFOFASCIALIS[z].—(Plate LXXVI., Fig. 11.)—Measures 8 lines in expanse; wings ashy-red, with an oblique red fascia at the base, a red spot on the middle of the costa, and a subapical, very much undulated, red fascia; the posterior wing reddish-white, with a dull reddish border. Unique in the cabinet of Mr. Bentley from that of Mr. Haworth. Locality unknown.

[z] SYNONYMES.—*Ennychia rufofascialis*, Stephens; Wood, fig. 790.
Pyralis fascialis, Haworth, but not of Hübner and Curtis.

PYRAUSTA, SCHRANK. PYRALIS, PARS, HAWORTH.

These insects have the wings adorned with orange or whitish spots, and fasciæ on a purple or brown ground; the palpi are porrected into a thick squamose beak; the spiral tongue is long; the antennæ slender and simple; the feet elongate; when at rest they sit with their wings in a triangle, and they fly in the sunshine, frequenting heathy places and hedges. They are, in fact, very closely allied to the species of the two preceding groups.

SPECIES 1.—PYRAUSTA PURPURALIS[a].—(Plate LXXVI., Fig. 12.)—Measures 10 lines in expanse; wings brown, with a rich purple gloss; between the base and middle of the wing are several small but variable fulvous dots, and beyond the middle an oblique orange-coloured fascia, composed of spots conjoined, and an occasionally obsolete, slender, subapical striga; hind wings brown, with a spot towards the base on the outer margin, followed by a curved, fulvous striga beyond the middle, and an occasional, submarginal, slender striga of the same colour. The caterpillar is ashy, spotted with black and white, and with a yellow line on the back and sides; it feeds on the whitethorn; and the moth appears in May and August, and is very common and widely dispersed.

[a] SYNONYMES.—*Phalæna (Pyralis) purpuralis*, Linnæus; Donovan, 10, pl. 339, fig. 2; Harris, Aurelian, pl. 28, fig. li.; Haworth; Stephens; Wood, fig. 793.
Pyralis coccinalis, Hübner.

SPECIES 2.—PYRAUSTA PUNICEALIS[b].—(Plate LXXVI., Figs. 13, 14.)—Measures from 8 to 10 lines in expanse; fore wings purplish-brown, with an interrupted fascia beyond the middle, and some spots towards the base of an orange colour; also occasionally with a subapical paler striga; hind wings with a patch of yellow occasionally towards the base, and an entire orange fascia beyond the middle. Very common in June, July, and August. The caterpillar is green, with pale yellow lines on the back and sides.

[b] SYNONYME.—*Pyralis punicealis*, Fabricius; Haworth; Hubner; Stephens; Wood, fig. 794.

SPECIES 3.—PYRAUSTA OSTRINALIS[c].—(Plate LXXVI., Fig. 15.)—Measures 7 lines in expanse; wings rich purplish-brown; the anterior with an orange patch towards the tips, occasionally dilated behind into an abbreviated fascia, and some irregular, small, variable, occasional dots on the disk; hind wings with a broader orange fascia, the basal spot wanting. Taken in the southern counties, but rarer than the preceding.

[c] SYNONYME.—*Pyralis ostrinalis*, Haworth; Stephens; Wood, fig. 795.

SPECIES 4.—PYRAUSTA PORPHYRALIS[d].—(Plate LXXVI., Fig. 16.)—Measures from 6 to 9 lines in expanse; wings brown, irrorated with golden scales, and with a patch of orange near the tips; hind wings with a broader orange, or whitish abbreviated fascia beyond the middle; the disk of the fore wings occasionally bears some minute orange spots. Taken in various parts of the country, in June, July, and August. I have taken it in the Isle of Wight.

[d] SYNONYME.—*Ph. Pyr. porphyralis*, Wien. Verz.; Fabricius; Haworth; Hübner; Stephens; Wood, fig. 796.

SPECIES 5.—PYRAUSTA CESPITALIS[e].—(Plate LXXVI., Fig. 17.)—Measures 6 or 7 lines in expanse; wings dark brown, with lighter clouds especially towards the costa, behind which is a darker dot in the middle of the

wing, followed by a dull straw-coloured striga dilated towards the costa, and an indistinct subapical striga of the same colour; hind wings brown with straw-coloured strigæ. Taken in chalky places in July and August.

[e] SYNONYME.—*Pyralis cespitalis*, Fabricius; Haworth; Stephens; Wood, fig. 791.

SPECIES 6.—PYRAUSTA SORDIDALIS[f].—(Plate LXXVI., Fig. 18.)—Measures 7 or 8 lines in expanse; and is closely allied to the preceding, from which it differs in its much more uniform colour; the clouds very indistinct, and the straw-coloured marks nearly obliterated. Taken in chalky and grassy places throughout the summer months.

[f] SYNONYME.—*Pyralis sordidalis*, Haworth; Hübner; Stephens; Wood, fig. 792.

DIASEMIA, HÜBNER, STEPHENS. HYDROCAMPA, PARS, STEPHENS (CAT.)

The species of this and the four following groups constitute a very interesting section of the present family, distinguished by their prettily variegated wings, whence they have received the name of China-marks: they are aquatic in their larva state, and in the imago there is considerable difference in the structure of their palpi as well as in the form of their wing. The type of this present group has the labial palpi porrected into a beak, with the extremity rather drooping; the fore wings are very acute, and slightly falcate, and the maxillary palpi are slightly developed.

SPECIES 1.—DIASEMIA LITERALIS[g].—(Plate LXXVI., Fig. 19.)—Measures about three quarters of an inch in expanse; wings brown, clouded with darker shades of brown; the anterior with an oblique white streak at the base, with a curious white central mark, resembling an Arabic character, in the middle; beyond this a white striga, bent outwards, and a slender white line next the costa, at the apex; hind wings brown, with two whitish strigæ, the second much angulated, and interrupted. Taken in June in moist places, Darenth Wood, Kent, and the New Forest.

[g] SYNONYME.—*Pyralis literalis*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 798.
Phalæna reticularis, Linnæus, Faun. Suec.

HYDROCAMPA, LATREILLE. NYMPHULA, SCHRANK.

The species of this group have the labial palpi recurved, short, and very scaly; the antennæ simple, but with the tips slightly serrated; the wings pale, marked with large dark double circles and streaks; the fore ones with the tips not falcate. The apical margin slightly rounded. The caterpillars are slender, 16-footed, residing in cases formed of pieces of the leaves of water plants, on which they feed.

SPECIES 1.—HYDROCAMPA (NYMPHULA, Hüb.) POTAMOGATA[h].—(Plate LXXVI., Fig. 20.)—Varies from 1 to 1⅓ inch in expanse; wings pale fulvous-brown; the fore ones with large patches of white surrounded by brown lines, and these by white edges; hind wings, with the base, and a broad fascia across the middle, of white; the latter with a patch of fulvous in the middle; along the apical margin of all the wings is a row of white oblong dots more or less confluent; the markings of the wings are very variable, as well as the shades of colour. The moth appears in June, July, and August, in marshes and on the edges of ditches, etc., and is very abundant.

[h] SYNONYMES.—*Phalæna Geometra potamogata*, Linnæus; Donovan, xi. pl. 363, fig. 1; Harris, Aurelian, pl. 41, fig. 0—9; Harris, Exposition, pl. 8, fig. 2; Stephens; Wood, fig. 799.
Pyralis Nymphealis, Hübner.

SPECIES 2.—HYDROCAMPA NYMPHÆATA[i].—(Plate LXXVI., Figs. 21, 22, 23.)—Varies from ¾ to 1 inch in expanse; wings white, divided into numerous large patches by brown (generally duplicated) lines, the space between the latter being paler brown; hind wings with the base, and a broad central fascia (in which is a brown patch) of white; apical margin of all the wings with an entire white fascia. Some specimens of the moth are almost entirely white, with the brown markings almost obliterated. The caterpillar feeds on duckweed; and the moth appears in July, in damp situations, and is very common.

[i] SYNONYMES.—*Phalæna Geometra nymphæata*, Linnæus; Haworth; Stephens; Wood, fig. 800. | *Phalæna stagnata*, Donovan, xi., pl. 362, f. 2. *Pyralis potamogalis*, Hübner.

CATACLYSTA, HÜBNER. HYDROCAMPA, PARS, CURTIS.

The labial palpi in this group are slender, recurved, and not thickly clothed with scales; the maxillary palpi minute; the spiral tongue almost obsolete; and the singular row of pearly dots on a black ground, along the margin of the hind wings, distinguish this genus from the other China-marks.

SPECIES 1.—CATACLYSTA LEMNATA[j].—(Plate LXXVI., Figs. 24, 25.)—Measures from ⅔ to 1 inch in expanse; fore wings of the male white, of the female pale ashy-brown, slightly marked with transverse shades; hind wings white, rather dusky at the base, slightly strigose, and with the apical margin in both sexes black, with silvery dots; the fore wings in the female are considerably more elongated than the males. The caterpillar feeds on duckweed, forming cases like those of the preceding genus. The moth appears in the summer months, in most places, and is very common.

[j] SYNONYMES.—*Phalæna Geometra lemnata*, Linnæus; Hübner; Donovan, 8, pl. 266, fig. 1; Haworth; Stephens; Wood, fig. 801. Harris, Aurelian, pl. 7, fig. 1. *Phalæna uliginata*, Fabricius (female).

PARAPONYX, HÜBNER. HYDROCAMPA, PARS, CURTIS.

This genus of the China-mark moths has long narrow wings, rounded at the extremity; the disk marked with flexuous lines, and ocellated in the middle; the labial palpi ascending, with the terminal joint rather thickly squamose; the spiral tongue rather short. The larva feeds on Stratiotes aloides, and has the sides of the body furnished with slender filamentous appendages connected with the organs of respiration.

SPECIES 1.—PARAPONYX STRATIOTATA[k].—(Plate LXXVI., Fig. 26.)—Measures from ⅔ to 1 inch in expanse; fore wings straw coloured (male), or pale reddish-brown (female), with two dark dots on the disk; towards the base a central dark ocellus, followed by a dark flexuous striga, edged with pale; in the male, the extremity of the wing also rather darker; hind wings whitish, with an interrupted striga near the extremity, and another at the anal angle. The caterpillar is green, varied with yellow and white, and with a pale line down the back. The moth appears in June and July, and is common in marshy places.

[k] SYNONYMES.—*Phalæna Geometra stratiotata*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 802; Curtis, Brit. Ent., pl. 495. *Phalæna Geometra paludata*, Fabricius.

PHLYCTÆNIA, Hübner. HYDROCAMPA, pars, Stephens (Cat.) SCOPULA, pars, Curtis.

This insect forms an interesting link between the China-marks and some of the succeeding insects, especially some of the species of Margaritia. It has elongate labial palpi, horizontally porrected; small, acute, maxillary palpi; a very long spiral tongue; wings dark coloured, but with large pale blotches; whilst the caterpillar is terrestrial, feeding on the elder, and making a cocoon, in which it undergoes its transformations.

Species 1.—Phlyctænia sambucalis[l].—(Plate LXXVI., Figs. 27, 28.)—Varies from $\frac{3}{4}$ to 1 inch in expanse; wings glossy mouse-brown; the four ones with four unequal-sized white blotches on the disk; outer one, the largest, followed by a curved, maculated striga of the same colour, widest towards the costa; hind wings with similar markings. The caterpillar is pale green, with pale lines. It feeds on the elder; and the moth appears in June. It is very common in gardens.

[l] Synonyme.—*Pyralis sambucalis*, Wien. Verz.; Fabricius; Haworth; Albin, pl. 37, fig. 59, a—d; Hübner; Stephens; Wood, fig. 803.

EUDIOPTIS, Hübner. DIAPHANIA, Stephens (Catal.)

The very exotic-looking type of this genus may at once be distinguished by its semi-transparent, pale pearly wings, having a narrow dark margin; the fore ones very acute at the tip, and obliquely truncate; and the palpi are densely squamose, forming a mask in front of the face; the maxillary palpi are minute.

Species 1.—Eudioptis lucernalis[m].—(Plate LXXVI., Fig. 29.)—Measures 10 or 11 lines in expanse; wings pearly-white; the antetior with the costa and apical margin, and the posterior with the apical margin, broadly blackish; base of the abdomen pearly-white. Taken near Plymouth, and also at Mickleham, in October, by J. Walton, Esq.

[m] Synonyme.—*Pyralis lucernalis*, Hübner; Haworth; Stephens; Wood, fig. 804.

NOMOPHILA, Stephens. SCOPULA, pars, Curtis.

The antennæ are slender and pubescent beneath in the males; the labial palpi porrected and bent upwards, densely squamose; the fore wings are long and narrow, and in repose they are slightly deflexed and convoluted; they, and especially the hind wings, are semi-transparent; the body is long and slender. Mr. Stephens, in his "Illustrations," has removed the genus to the family Tineidæ.

Species 1.—Nomophila hybridalis[n].—(Plate LXXVI., Fig. 30, and Plate CXV., Fig. 34.)—Measures from 10 to 14 lines in expanse; fore wings grey-brown; towards the base of the wing is a slender dusky striga, often obsolete, followed by a large, central, darker fascia; and beyond this, towards the costa, a large dark patch, followed by an indistinct, dusky, curved striga; at the extremity of the costa, and on the apical margin, are some dark spots; hind wings paler. Taken in July and August, in different parts of the country, and not uncommon. I have taken it in the Isle of Wight in August, in rushy places.

[n] Synonymes.—*Pyralis hybridalis*, Hübner; Haworth; Stephens; Wood, fig. 1476.
Tinea noctuella, Wien. Verz.

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DESCRIPTION OF PLATE LXXVII.

INSECTS.—Fig. 1. Eurrhypara urticata (the small magpie). 2. The Caterpillar.
" Fig. 3. Mesographe forficalis (the garden pebble). 4. The Caterpillar.
" Fig. 5. Margaritia diversalis (the yellow under-winged pearl).
" Fig. 6. Margaritia asinalis (the dingy pearl).
" Fig. 7. Margaritia lancealis (the long-winged pearl).
" Fig. 8. Margaritia verticalis (the mother-of-pearl).
" Fig. 9. Margaritia centro-strigalis (the central-striped pearl).
" Fig. 10. Margaritia cinctalis (the lesser pearl).
" Fig. 11. Margaritia palealis (the sulphur).
" Fig. 12. Margaritia hyalinalis (the scarce pearl).
" Fig. 13. Margaritia angustalis (the narrow-winged pearl).
" Fig. 14. Margaritia terminalis (the bordered pearl).
INSECTS.—Fig. 15. Margaritia glabralis (the dingy pearl).
" Fig. 16. Margaritia pallidalis (the delicate pearl).
" Fig. 17. Margaritia flavalis (the gold China mark).
" Fig. 18. Margaritia ochrealis (the small straw China mark).
" Fig. 19. Nascia cilialis (the orange cloud).
" Fig. 20. Margaritia ferrugalis (the rusty dot).

The whole of the insects in this plate are from the cabinet of Mr. Bentley, with the exception of Diversalis, from the specimen in the British Museum; Centro-strigalis and Pallidalis, from Wood's figures of Mr. Stephens's specimens; and Cilialis, from Hübner's figure, which, though differing slightly, appears to be the same species as Mr. Curtis's specimen, figured by Wood. Pallidalis, on the contrary, differs much from Hübner's figure, and is evidently different from the Pallidalis of the continental authors. The caterpillars are from Hübner.

H. N. H.

EURRHYPARA, HÜBNER, SCOPULA, PARS, CURTIS.

The type of this group has the body long and slender, of an orange colour, fasciated with black; the palpi rather short, acute at the tip, and with the maxillary palpi distinct, slender, and porrected; the antennæ long and slender; the wings moderately narrow, white, with black spots, arranged in fasciæ. The caterpillar is slightly hairy, 16-footed, and undergoes its transformations within a rolled-up leaf.

SPECIES 1.—EURRHYPARA URTICATA[o].—(Plate LXXVII., Fig. 2.)—Measures from 1 to 1¼ inch in expanse; wings white, anterior with the costa and two adjoining spots, several spots towards the base of the inner margin, and two curved fasciæ towards the extremity of all the wings, formed of spots of different sizes, black; the fringe of the fore wings black; body orange, varied with black stripes and fasciæ. The caterpillar is greenish, with two yellow dorsal lines. It feeds on nettles; and the moth appears about the beginning of June, in lanes and gardens, and is one of the most abundant and prettiest species in the family.

[o] SYNONYME.—*Phalæna Geometra urticata*, Linnæus; Hübner; Albin, pl. 37, fig. 60, i—m; Harris, Aurelian, pl. 6; Donovan, 10, pl. 349, fig. 2; Haworth; Stephens; Wood, fig. 805.

MESOGRAPHE, HÜBNER, STEPHENS, SCOPULA, PARS, CURTIS.

The body is rather short and slender; the palpi short, hairy, and deflexed at the tips; the maxillary palpi are prominent, elevated, and hairy; the legs of moderate length; the antennæ slender; the wings moderately narrow, of a straw colour, marked with oblique, slender, brown strigæ. The caterpillar is naked, and 16-footed.

SPECIES 1.—MESOGRAPHE FORFICALIS[p].—(Plate LXXVII., Figs. 3, 4.)—Measures from 1 to 1⅛ inch in expanse; wings straw-buff; the fore ones with four very slender and very oblique brown strigæ; the interior ones more or less obsolete; the centre of the wing slightly blotched with brown, and a short dark brown dash running obliquely from the tip of the wing; hind wings with a slender brown striga beyond the middle; tips of all the wings with a slender dark edge. Caterpillar green, with a darker line down the back and sides, the latter spotted with white; the head brown. It feeds on horse-radish, etc.; and the moth appears in gardens throughout the summer, and is very abundant.

[p] SYNONYME.—*Phalæna Pyralis forficalis*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 806.

MARGARITIA, Stephens. SCOPULA, Curtis.

The species of this numerous genus have the antennæ, limbs, and abdomen long and slender; the wings also generally elongate-triangular, forming, when at rest, a deflexed triangle; they are generally of a pale or straw colour, traversed by faint transverse strigæ, and are generally distinguished by their pearly appearance, whence the name of the genus; the palpi porrected, and rather short, very squamous and pointed at the tip; the maxillary palpi distinct and elevated, with the tip squamose. The caterpillars are slender, 16-footed, and undergo their transformations in a cocoon, generally formed of dried leaves or moss, fastened together with threads. The species have been formed by Hübner into various minor divisions, from the forms and colours of the wings.

Species 1.—Margaritia diversalis[q].—(Plate LXXVII., Fig. 5.)—Measures about 1⅓ inch in expanse; fore wings reddish-brown, with two spots on the disk, towards the costa, followed by a slender, curved, dusky striga; the apical portion of the wing also darker; hind wings orange, with a slender dusky border. Hitherto only one indigenous specimen has been recorded, which is in the British Museum collection, taken near Bristol, in June; but our friend, W. F. Evans, Esq., also took a specimen in June, 1842, either at Darenth Wood or in Yorkshire.

[q] Synonyme.—*Pyralis diversalis*, Hübner; Stephens; Wood, fig. 807.

Species 2.—Margaritia asinalis[r].—(Plate LXXVII., Fig. 6.)—Measures 1¼ inch in expanse; fore wings ashy-brown, with a rather broad, slightly dusky bar towards the base of the wings, bearing two dots in front; the middle of the wing more dusky, with a paler round patch towards the costa, and a flexuous striga towards the extremity of the wing; hind wings rather paler, with an indistinct striga beyond the middle. Taken by Captain Blomer, near Teignmouth, Devon; and others near Barnstaple, by W. Raddon, Esq.

[r] Synonyme.—*Pyralis asinalis*, Hubner; Curtis; Stephens; Wood, fig. 808.

Species 3.—Margaritia lancealis[s].—(Plate LXXVII., Fig. 7.)—Measures about 1⅓ inch in expanse; the fore wings are narrow and long, of an ashy yellowish-brown colour, with an indistinct striga towards the base; a pale patch in the middle of the wing, towards the costa, followed by a denticulated dusky striga running across all the wings; hind wings similarly coloured. Taken in various parts of Kent, Devon, and Norfolk, in June, but rare.

[s] Synonymes.—*Pyralis lancealis*, Wien. Verz; Stephens; Wood, fig. 809. | *Pyralis glabralis*, Hubner; Fabricius. *Pyralis longalis*, Haworth.

Species 4.—Margaritia verticalis[t].—(Plate LXXVII., Fig. 8.)—Measures about 1½ inch in expanse; wings very pale silvery or pearly-buff; all with a dusky striga towards the base; the fore ones with two dots towards the costa, followed by a very indistinct, dusky, undulated striga, dilated towards the costa into a darker patch, and followed by a more distinct, waved, and much bent striga; the apical margin dusky, and the extreme edge pale; fringe dusky. The caterpillar is green. It feeds spun up within the leaves of the nettle, and changes to a chrysalis at the end of June; and the moth appears in July, and is extremely abundant.

[t] Synonyme.—*Phalæna Pyralis verticalis*, Linnæus; Albin, pl. 73, fig. a—d; Wilkes, pl. 51; Harris, Aurelian, pl. 33, fig. h—l; Hubner; Donovan, 16, pl. 556; Haworth; Stephens; Wood, fig. 810.

Species 5.—Margaritia centro-strigalis[u].—(Plate LXXVII., Fig. 9.)—Measures 1¼ inch in expanse; wings ochraceous-yellow, fore ones with a faint incurved striga towards the base; a lunate spot in the middle towards the costa, and a very flexuous striga between it and the extremity of the wings. Hind wings with a

brownish spot towards the base, and a very irregular and much angulated striga beyond the middle. Unique in the collection of Mr. Stephens, from Devonshire.

[u] Synonyme.—*Margaritia centro-strigalis*, Stephens; Wood, fig. 811.

Species 6.—Margaritia cinctalis[v].—(Plate LXXVII., Fig. 10.)—Measures from 13 to 15 lines in expanse; wings pale straw-yellow; the costa and apical portions richer yellow; in the middle towards the costa are two darker patches, followed by two darker waved strigæ, the inner of which is most strongly dentated; hind wings with a darker basal patch, and two strigæ. The contrast between the upper and under sides is very striking; the latter being nearly white, with dark brown patches and strigæ. The caterpillar feeds on the broom; and the moth appears in clover fields about the beginning of July, and is not uncommon.

[v] Synonymes.—*Botys cinctalis*, Treitschke; Stephens; Wood, fig. 812. | *Pyralis limbalis*, Hübner, Haworth; but not of the Wiener Verz.

Species 7.—Margaritia palealis[w].—(Plate LXXVII., Fig. 11.)—Measures 1¼ inch in expanse; fore wings rather acute, and of a pale sulphur-green; the hind ones whitish; all with slightly dusky veins, and destitute of spots. Taken in August, near Dover, and in Norfolk.

[w] Synonyme.—*Pyralis palealis*, Wien. Verz.; Hübner; Fabricius; Haworth; Stephens; Wood, fig. 813.

Species 8.—Margaritia hyalinalis[x].—(Plate LXXVII., Fig. 12.)—Measures 1⅓ inch in expanse; wings straw-yellow; the anterior with an incurved striga towards the base; the two stigmata being rather indistinct, followed by a deeply-bent striga beyond the middle, and another subapical interrupted striga; hind wings with a dusky curved striga towards the middle, and a waved one near the margin. Taken at Darenth Wood, Kent, in July.

[x] Synonyme.—*Pyralis hyalinalis*, Hübner; Haworth; Stephens; Wood, fig. 814.

Species 9.—Margaritia angustalis[y].—(Plate LXXVII., Fig. 13.)—Measures 13 or 14 lines in expanse; fore wings narrow, straw coloured, with an obscure dusky striga towards the base; the two stigmata nearly obsolete, followed by a curved dusky striga, extending across all the wings; hind wings whitish, with dusky margins. Taken in various parts of the south of England (Darenth Wood, the New Forest, etc.), about the beginning of June.

[y] Synonyme.—*Pyralis angustalis*, Haworth; Stephens; Wood, fig. 815.

Species 10.—Margaritia terminalis[z].—(Plate LXXVII., Fig. 14.)—Measures 11 or 12 lines in expanse; very similar to the last-described insect, but smaller, and with the wings much broader; pale ashy-straw coloured; obsoletely strigose, and with the stigma and apical margin of all the wings dusky. Taken in various parts of Kent, in June.

[z] Synonyme.—*Pyralis terminalis*, Haworth; Stephens; Wood, fig. 816.

Species 11.—Margaritia glabralis[a].—(Plate LXXVII., Fig. 15.)—Measures 1 inch in expanse; fore wings dark reddish-buff; stigmata narrow and dusky, separated by a whitish patch, beyond which is a nearly indistinct, subapical, denticulated striga; hind wings paler, with a slight marginal band. Very rare. Locality unknown.

[a] Synonyme.—*Pyralis glabralis*, Hübner; Fabricius; Haworth; Stephens; Wood, fig. 817.

Species 12.—Margaritia pallidalis[b].—(Plate LXXVII., Fig. 16.)—Measures from 11 to 13 lines in expanse; wings very pale straw-buff, with a pearly gloss, with the costa dusky; with a straight striga near the base, followed by the two pale stigmata, edged with dusky; the anterior small and round; the second

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lunate and larger; from the latter runs a waved striga, which crosses the hind wings; on the costa, half-way between the outer stigma and apex is a dark dot, from whence arises a straight, dusky, slender striga, which runs to the opposite angle of the wing; hind wings also with a striga before the middle; all the wings with a marginal line of fine dark dots; body long. [*Note.*—Wood's figure is excellent, but wants the pearly gloss.] Hitherto a single specimen, obtained originally from Francillon's collection, and now belonging to Mr. Stephens, has been recorded. I, however, possess a fine individual from Sir Patrick Walker's collection.

[b] Synonyme.—*Pyralis pallidalis*, Haworth; Stephens; Wood, fig. 818.

Species 13.—Margaritia flavalis[c].—(Plate LXXVII., Fig. 17.)—Measures 12 or 13 lines in expanse; wings golden coloured, with three distinct stigmatiform spots on the disk near the fore margin, placed between the strigæ, the first of which is less distinct, and the outer one deeply angulated in the middle; the apical portion also dusky; hind wings brownish, with an indistinct brown striga beyond the middle, and sometimes a second formed of a row of dots next the margin. Rare; found near London and in Norfolk in July, but rare.

[c] Synonyme.—*Pyralis flavalis*, Hübner; Haworth; Stephens; Wood, fig. 819.

Species 14.—Margaritia ochrealis[d].—(Plate LXXVII., Fig. 18.)—Measures 9 or 10 lines in expanse; fore wings ochreous straw colour, with a slight incurved striga towards the base, and a much curved one beyond the middle; the two stigmata distinct, the first small and the second transverse; hind wings dusky-white with the central dot, and subapical dusky striga, sometimes nearly obsolete. Taken near London and elsewhere, in June, but not common.

[d] Synonymes.—*Pyralis ochrealis*, Fabricius; Hübner; Haworth; Stephens; Wood, fig. 824.
Pyralis thapsalis, Treitschke.
Pyralis verbascalis, Hübner; Haworth.

Species 15.—Margaritia ferrugalis[e].—(Plate LXXVII., Fig. 20.)—Measures 9 or 10 lines in expanse; wings rusty-red; the anterior with two dark stigmata (the first small, the second reniform and larger), preceding a waved brown striga; apical margin with a row of dusky dots; hind wings brown, with a dot in the middle, and the margin darker. Taken in various parts of the south of England, but rare.

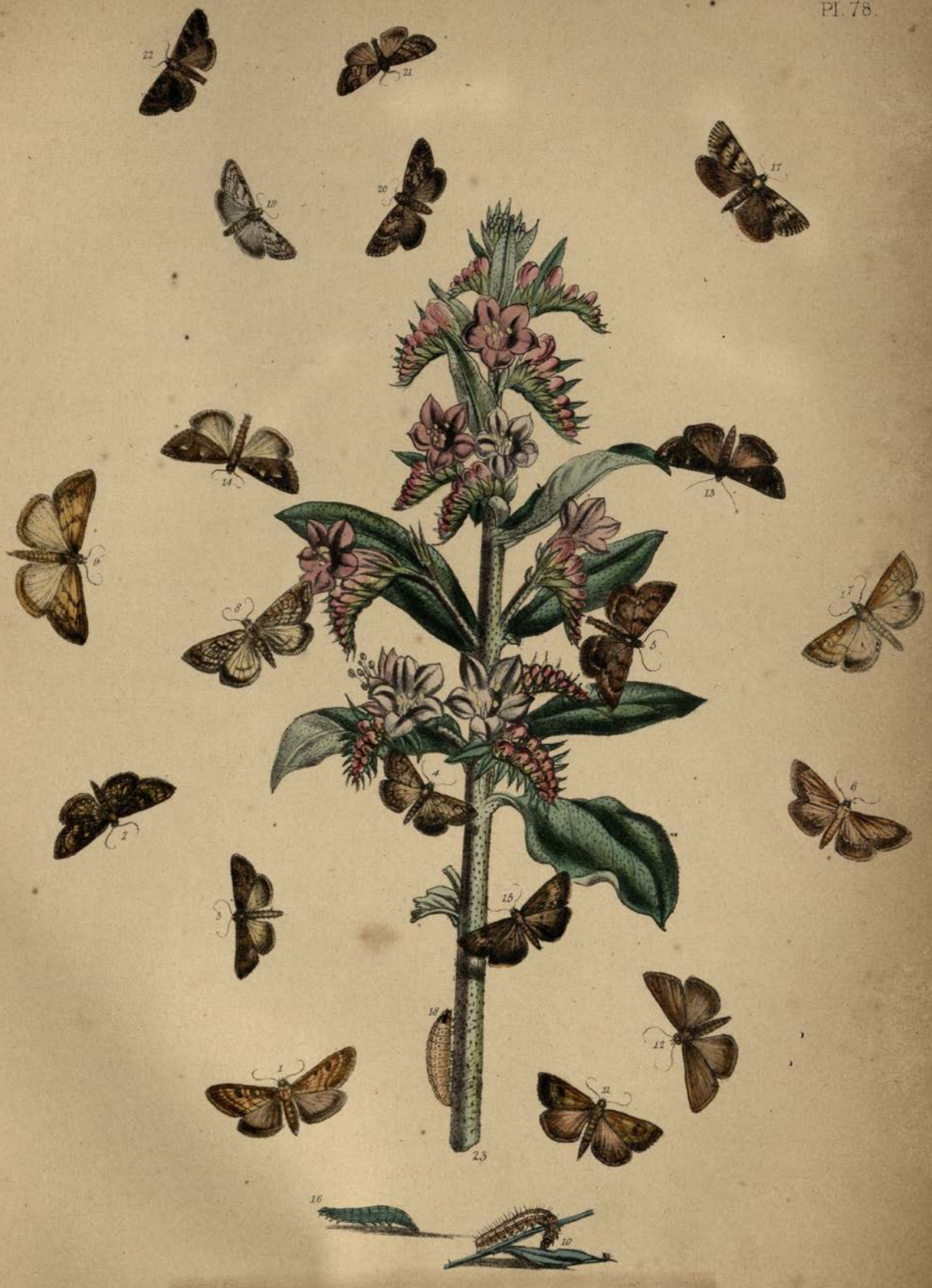
[e] Synonyme.—*Pyralis ferrugalis*, Hübner; Haworth; Stephens; Wood, fig. 822.

DESCRIPTION OF PLATE LXXVIII.

Insects.—Fig. 1. Margaritia fulvalis (the fulvous dot).
„ Fig. 2. Margaritia verbascalis (the rusty China mark).
„ Fig. 3. Margaritia longipedalis (the long-legged pearl).
„ Fig. 4. Margaritia pulveralis (the dusted pearl).
„ Fig. 5. Margaritia fuscalis (the cinereous pearl).
„ Fig. 6. Margaritia fimbrialis (the edged pearl).
„ Fig. 7. Margaritia institialis (the pale straw).
„ Fig. 8. Margaritia stramentalis (the checquered straw).
„ Fig. 9. Margaritia margaritalis (the clouded yellow pearl).
10 The Caterpillar.
„ Fig. 11. Margaritia sericealis (the straw dot).
„ Fig. 12. Margaritia alpinalis (the Alpine pearl).
„ Fig. 13. Margaritia stictealis (the diamond spot).
„ Fig. 14. Margaritia olivalis (the white brindled).
Insects.—Fig. 15. Margaritia prunalis (the clouded pearl). 16. Caterpillar.
„ Fig. 17. Cymeda dentalis (the starry brindled). 18. Caterpillar.
„ Fig. 19. Nola strigulalis (the least black arches).
„ Fig. 20. Nola monachalis (the small black arches).
„ Fig. 21. Nola cucullatella (the short cloaked).
„ Fig. 22 Nola fuliginalis (the dusky cloaked).
Plant. — Fig. 23. Echium vulgare (common bugloss).

Fulvalis is from Duponchel's figure; the solitary British specimen being too pale and faded to convey a good idea of the species; Hübner's figure differs considerably from that of Duponchel. Fimbrialis is from Mr. Stephens's specimen as figured by Wood. The Caterpillars are from Freyer and Hübner. H. N. H.

Species 16.—Margaritia fulvalis[f].—(Plate LXXVIII., Fig. 1.)—Measures 8 lines in expanse; fore wings fulvous-red, with two brown strigæ, edged on the outside with white, between which are the two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stigmata edged with brown, the anterior one being the smallest; apical margin with a dusky line; hind wings ashy-brown, with a central dusky spot, and a subapical, nearly obsolete striga. A single rubbed specimen of doubtful locality is in Mr. Stephens's collection.

[f] SYNONYME,—*Pyralis fulvalis*, Hübner; Stephens; Wood, fig. 823.

SPECIES 17.—MARGARITIA VERBASCALIS[g].—(Plate LXXVIII., Fig. 2.)—Measures 9 or 10 lines in expanse; fore wings orange-yellow, with dusky clouds; an incurved dark striga towards the base, followed by a pale patch in the discoidal cell, bearing a dusky dot; the outer stigma lunate transverse, and appearing to be connected behind with a dusky striga, which is, however, a portion of the succeeding striga, which is much curved towards the costa, and very deeply angulated and incurved in the middle; beyond this is a deeply-waved, dusky, and almost obsolete striga; hind wings more obscure, with a dark spot, and two clear dentated and waved strigæ. This is not an uncommon species in various parts of the south of England, occurring in July.

[g] SYNONYMES.—*Pyralis verbascalis*, Wien. Verz.; Stephens; Wood, fig. 820.
Pyralis arcualis, Hübner; Haworth.

SPECIES 18.—MARGARITIA LONGIPEDALIS[h].—(Plate LXXVIII., Fig. 3.)—Measures 13 or 14 lines in expanse; fore wings reddish-ochre, with the two stigmata whitish and distinct, the first small and round, the second ear-shaped; behind the first is a slender dusky line, and beyond the outer one is a dusky striga, arising from a dark dot on the costa, and very much sinuated in the middle; hind wings slightly rusty-brown, with two dusky strigæ; wings, body, and legs long and slender. Taken near Weymouth, Teignmouth, and Ryde, amongst brambles, at the beginning of July.

[h] SYNONYME.—*Scopula longipedalis*, Curtis, Brit Ent., pl. 312; Stephens; Wood, fig. 825.

SPECIES 19.—MARGARITIA PULVERALIS[i].—(Plate LXXVIII., Fig. 4.)—Measures $\frac{3}{4}$ inch in expanse; wings pale ashy-straw colour, with an incurved striga near the base, and an irregularly-waved one beyond the middle; both very faint, and between them a faint lunule; apical portion of the wings rather darker; hind wings paler, faintly strigose. Taken in June, at Darenth Wood, but very rare.

[i] SYNONYME.—*Pyralis pulveralis*, Hübner; Stephens; Wood, fig. 826.

SPECIES 20.—MARGARITIA FUSCALIS[k].—(Plate LXXVIII., Fig. 5.)—Measures from $\frac{5}{8}$ to 1 inch in expanse; wings ashy-brown; the anterior with the base rather clouded, and with a brown lunule preceding a repanded, dusky waved striga, which runs across all the wings, and the outer edge of which is paler; hind wings with a central dot. The caterpillar is pale green, with a bright line down the back, and dusky lateral stripes. It feeds on the golden rod, and the moth appears in June, and is far from rare in the south of England.

[k] SYNONYMES.—*Pyralis fuscalis*, Wien. Verz.; Curtis; Stephens; Wood, fig. 827.
Pyralis cinerealis, Fabricius; Hubner; Haworth.

SPECIES 21.—MARGARITIA FIMBRIALIS[l].—(Plate LXXVIII., Fig. 6.)—Measures 1 inch in expanse; wings whitish-ash, with the two stigmata very faint, preceded by a nearly obsolete incurved striga, and followed by a very much waved brown striga, which also runs across the hind wings, the space beyond which is dusky. Taken at Darenth Wood, and near Dover, in June. (Stephens).

[l] SYNONYME.—*Margaritia fimbrialis*, Stephens; Wood, fig. 828.

SPECIES 22.—MARGARITIA INSTITIALIS[m].—(Plate LXXVIII., Fig. 7.)—Measures from 10 lines to 1 inch in expanse; wings whitish-straw; obsoletely strigose, with two large stigmata, the luteous margins of which are alone distinct; beyond the stigmata is a faint lutescent striga; hind wings with a central dot, and obsolete

striga, and with a large dusky cloud on the outer angle. A very widely-dispersed and not very rare species, found about the end of June.

[m] SYNONYMES.—*Pyralis instillialis*, Hübner; Curtis; Stephens, Illustr.; Wood, fig. 829.
Pyralis lutealis, Haworth; Stephens, Catal., but not of Hübner.

SPECIES 23.—MARGARITIA STRAMENTALIS[n].—(Plate LXXVIII., Fig. 8.)—Measures 1 inch in expanse; fore wings straw-yellow, pulverose, reticulated with faint pitchy-brown veins, and four nearly equidistant waved strigæ, the ordinary space between the stigmata being pale; the outer stigma reniform, and edged with brown lines, and connected with the preceding one, which is heart-shaped; hind wings whitish-buff, with the posterior margin and a slender line near the margin of brown; the fringe of the fore wings ashy, of the hind ones white, and with a dusky spot near the anal angle. Taken in marshy places near London, and in Norfolk, in June.

[n] SYNONYMES.—*Pyralis stramentalis*, Treitschke; Hübner, Verz.; Stephens, Illust.; Wood, fig. 830.
Pyralis elutalis, Hübner; Haworth; Stephens., Catal.

SPECIES 24.—MARGARITIA MARGARITALIS[o].—(Plate LXXVIII., Figs. 9, 10.)—Measures about 1¼ inch in expanse; fore wings pale orange or rich straw coloured, with the extremity reddish-brown, with slight indications of strigæ across and beyond the middle of the wing, and an oblique darker patch at the apex; hind wings paler, almost white, with a pale reddish-brown margin. Taken in Norfolk, Berks, and near Bedford, and Bristol, in June. The caterpillar is straw coloured, with a reddish line on each side, and black dots. It feeds on grasses.

[o] SYNONYMES.—*Phalæna margaritalis*, Wien. Verz.; Fabricius; Stephens; Wood, fig. 831.
Pyralis erucalis, Hübner.

SPECIES 25.—MARGARITIA SERICEALIS[p].—(Plate LXXVIII., Fig. 11.)—Measures 10 lines in expanse; fore wings yellow-buff, with the tips reddish-brown, and with a reniform brown stigma, each end bearing a black dot, beyond which is a slight yellow-brown striga; hind wings pale dirty white. The caterpillar is green, with two white stripes down the back, and some black dots; it feeds on grasses. The moth is rather common, and is taken in woods, in July.

[p] SYNONYMES.—*Pyralis sericealis*, Wien. Verz; Hübner; Haworth; Stephens; Wood, fig. 832.
Pyralis Leeana, Fabricius; Donovan, 10, pl. 357, fig. 1.

SPECIES 26.—MARGARITIA ALPINALIS[q].—(Plate LXXVIII., Fig. 12.)—Measures 13 lines in expanse; fore wings dull ashy coloured, with darker scales, and a small pale, almost indistinct, spot beyond the middle towards the costa; hind wings paler, with an ashy border. Taken on the tops of some of the Scotch mountains, in July.

[q] SYNONYMES.—*Pyralis alpinalis*, Wien. Verz.; Hübner; Stephens, Illust.; Wood, fig. 833.
Scopula uliginosalis, Curtis, MS.; Stephens, Catal,

SPECIES 27.—MARGARITIA STICTICALIS[r].—(Plate LXXVIII., Fig. 13.)—Measures 13 or 14 lines in expanse; wings shining, brownish, with a square whitish patch in the middle towards the costa, a pale dot on the costa near the apex, and a submarginal whitish striga; hind wings brown, with an obsolete darker striga beyond the middle. Taken in July, and widely dispersed, but rare.

[r] SYNONYMES.—*Phalæna Pyralis sticticalis*, Linnæus; Stephens, Illustr.; Wood, fig. 834.
Pyralis tetragonalis, Haworth; Stephens, Catal.
Pyralis fuscalis, Hübner.

SPECIES 28.—MARGARITIA OLIVALIS[s].—(Plate LXXVIII., Fig. 14.)—Measures 1 inch in expanse; fore wings brown, with two small white spots towards the base, a squarish white patch in the middle towards the

costa, followed by an oblong one, and an indistinct striga; costa with some black and white dots at the extremity; hind wings whitish with a brown border. Caterpillar dull green, with broad pale stripes on the back and sides, and a green head. It feeds on Veronica officinalis; and the moth appears in June, and is very abundant.

[s] Synonymes.—*Pyralis olivalis*, Wien. Verz.; Curtis; Stephens, Illustr.; Wood, fig. 835.
Scopula nivealis, Fabricius; Haworth; Harris, Aurelian, pl. 29, fig. p—s; Stephens, Catal.
Pyralis umbralis, Hübner.

Species 29.—Margaritia prunalis[t].—(Plate LXXVIII., Figs. 15, 16.)—This common insect measures about 1 inch in expanse, and has the fore wings dull ashy-brown very slightly clouded with lighter shades; the two ordinary stigmata indicated by dusky outlines, and behind them is a very slight dusky striga, and followed by a curved zigzag striga: a row of small black dots along the apical margin of the wings; the costa, towards the apex, is varied with white and dusky dots. The caterpillar is green, with paler dorsal stripes and black dots. It feeds on the blackthorn; and the moth appears at the end of June.

[t] Synonymes.—*Pyralis prunalis*, Wien. Verz.; Treitschke; Stephens; Wood, fig. 836.
Pyralis nebulalis, Haworth, but not of Hübner.
Pyralis leucophealis, Hübner.
Pyralis elutalis, Wien. Verz.
Pyralis albinalis, Hübner.

NASCIA, Curtis. MARGARITIA, pars, Stephens.

The antennæ are slender and filiform; the labial palpi porrected in front of the head, and drooping slightly like a beak; the maxillæ, or spiral tongue, rather short; the maxillary palpi short, distinct, with the apex truncate; the fore wings with the apex slightly hooked.

Species 1.—Nascia cilialis[u].—(Plate LXXVIII., Fig. 19.)—Measures 11 lines in expanse; fore wings pale orange, with the costa and veins bright ferruginous, the former shaded with a greyish bloom, the edge white, fringe whitish, with a brown line at the base: hind wings ochreous, yellowish-white at the base. Taken near Cambridge, in June.

Obs. In Hübner's figure there is a dusky suffused subapical striga in the fore wings, of which Mr. Curtis's specimen is destitute.

[u] Synonyme.—*Pyralis cilialis*, Hübner; Curtis, Brit. Ent., pl. 599; Stephens; Wood, fig. 821.

CYNÆDA, Hübner, Stephens. ODONTIA, Duponchel, Curtis.

The antennæ are rather short, slender, and simple; the spiral tongue very short; the maxillary palpi developed and squamose; the labial palpi rather longer than the head, porrected straight in front, and beak-like; the tip gradually acuminated; the fore wings are rounded at the tips, and are stated to be carried in a deflexed triangle when at rest. The caterpillars are thick, smooth, white, and fleshy, with small black tubercles; they have sixteen feet, and reside in the stalks of plants.

Species 1.—Cynæda dentalis[v].—(Plate LXXVIII., Figs. 17, 18.)—Measures 10 or 11 lines in expanse; wings very pale straw-coloured buff, varied with white transverse markings in the middle towards the costa, followed by a very dentated or stellated white striga, edged with black dentated or very zigzag lines, and followed by pale longitudinal dashes extending to the tips of the fringe, separated from each other by black lines; hind wings with a similar dentated striga beyond the middle. The caterpillar is pale and flesh coloured,

with the head and prothorax black, and black tubercles over the body. It feeds within the stems of Echium vulgare, which it quits, previous to assuming the chrysalis state within a dense cocoon, amongst the leaves. Extremely rare; near London, and Tavistock in Devonshire. It appears at the end of June, and beginning of August. Also taken at Lewes, on the cliff hills, at the beginning of July.

[v] Synonymes.—*Pyralis dentalis*, Wien. Verz.; Hübner; Haworth; Stephens, Ill. Haust., 4, pl. 33, fig. 1; Curtis, Brit. Ent., pl. 583; Wood, fig. 837.

Noctua fulminans, Fabricius.
Phalæna ramalis, Fabricius.

NOLA, Leach. HERCYNA, pars, Treitschke.

This curious genus has the antennæ of moderate length, and pilose beneath in the males; the palpi large, and slightly drooping; the spiral tongue short; the wings broad and entire, with the tips rather rounded; the fore ones, when at rest, forming a deflexed triangle; the disk with elevated tufts of scales. The caterpillars hairy, flattened, and 14-footed; the cocoon conical, with one end truncated. Figures of the different states of this genus will be found in my "Modern Classification of Insects," vol. ii. p. 399, figs. 110, 11—15.

This genus is of difficult locality. In several respects it closely approximates to several of the groups of the following family.

Species 1.—Nola strigulalis[w].—(Plate LXXVIII., Fig. 19.)—Measures 8 or 9 lines in expanse; fore wings white, with several fulvous tufts between the base and the middle of the wing, towards the costa; a much curved dusky striga towards the base; another broader, waved, and ashy coloured, and marked with black dots across the middle; the apical portions of the wing grey, with whitish undulated strigæ; hind wings pale ashy. Caterpillar ochreous-yellow and hairy. It feeds on the oak; and the moth appears about the beginning of June. Widely dispersed, but not a very common species in woods.

[w] Synonyme.—*Pyralis strigulalis*, Hübner; Haworth; Stephens; Wood, fig. 838.

Species 2.—Nola monachalis[x].—(Plate LXXVIII., Fig. 20.)—Measures from 10 to 11½ lines in expanse; fore wings ashy-grey; the costa varied with darker and lighter patches; a waved striga before, and another broader beyond the middle, enclosing three brown patches; extremity of the wing clouded with darker and lighter shades, and with short black dashes on the veins, and an apical row of black dots; hind wings dusky. Taken in woods, in June, but rare; and supposed by Mr. Stephens to be a possible suffused variety of the preceding insect.

[x] Synonyme.—*Pyralis monachalis*, Haworth; Curtis, Brit. Ent., pl. 428; Stephens; Wood, fig. 839.

Species 3.—Nola cucullatella[y].—(Plate LXXVIII., Fig. 21.)—Measures from 7 to 9 lines in expanse; wings ashy-white; fore ones with the base dark brown, which is terminated by a curved dark striga; middle of the wing rather clouded, beyond which is a grey fascia, edged with a dark striga; apical portion of the wing dusky, with a paler striga, and two dark dots on the costa. The caterpillar feeds on the apple, pear, etc. Common in hedges and gardens, in July.

[y] Synonymes.—*Phalæna Tinea cucullatella*, Linnæus; Haworth; Stephens; Wood, fig. 840.
Pyralis palliolalis, Hübner.

Species (?) 4.—Nola fuliginalis[z], Stephens.—(Plate LXXVIII., Fig. 22.)—"Wings of a smoky-bluish, with the base and a very obscure central line darker."

[z] Synonymes.—*N. fuliginalis*, Stephens, Catal.
N. cucullatella, variety, Stephens, Illustr.

Family TORTRICIDÆ, Leach.

This is a very natural family of large extent, corresponding with the section Tordeuses of Latreille, Platyomides of Duponchel, and Pyralides of the other French writers; and having broad entire fore wings, which, when closed, form a slightly-deflexed triangle, with the shoulders dilated. The maxillary palpi are never prominent, although possessed by many of the species; the labial palpi, on the other hand, are broad and very compressed, especially the middle joint, which is curved above, the last joint being short, and often more distinct and exposed; they are never recurved, but generally form a short beak in front of the head; the spiral tongue is short in the majority. The body is comparatively slender; the thorax rarely crested; the antennæ simple, or but slightly ciliated in a few species; the fore legs generally have a central tibial spur; the middle tibiæ one pair of spurs at the tips; and the hind tibiæ two pairs. The wings, in some species, are ornamented with tufts of raised scales; and, in one genus, they are deeply notched on the fore margin. The larvæ are naked and fleshy, with 6 pectoral, 8 ventral, and 2 anal feet; and for the most part, they take up their abode in a leaf curled up by the insect itself, and fastened with silken threads, forming a cylindrical tube open at each end, which thus serves for food and abode; others frequent the young buds and shoots of various plants, fastening several of the young leaves together so firmly as to impede their growth, and occasionally to be of serious injury to the plant, by destroying the parts of fructification and bloom. This is especially the case with Pœdisca angustiorana (which thus injures the apricot*); Argyrotoza Bergmanniana, a beautiful little species, which, in like manner, infests the rose†; and Tortrix vitana, Bosc, which is extremely obnoxious in the vine plantations in the south of France, and which afforded to the late Professor Audouin the subject of one of the most elaborate and beautifully-executed and illustrated memoirs which has hitherto been published. Others, again, reside within the pulpy substance of various fruits, especially the apple and plum, to which they are sometimes very detrimental.

DESCRIPTION OF PLATE LXXIX.

Insects—Fig. 1. *Hylophila prasinana* (green silver lines). 2. The Caterpillar. 3. The Cocoon.
„ Fig. 4. *Hylophila quercana* (scarce silver lines). 5. The Caterpillar. 6. The Chrysalis.
„ Fig. 7. *Earis chlorana* (small green oak). 8. The Caterpillar. 9. The Cocoon.
„ Fig. 10. *Tortrix viridana* (pea-green).
„ Fig. 11. *Tortrix palleana* (plain yellow).
„ Fig. 12. *Tortrix viburnana* (viburnian).
„ Fig. 13. *Tortrix Pillerana* (Piller's). 14. The Female.
„ Fig. 15. *Tortrix galiana* (the glossy golden brown). 16. The Female.
„ Fig. 17. *Lozotœnia Forsterana* (Forster's).
Insects.—Fig. 18. *Lozotœnia sorbiana* (the hazel tortrix).
„ Fig. 19. *Lozotœnia heparana* (the dark oblique bar).
„ Fig. 20. *Lozotœnia cinnamoneana* (the cinnamon).
„ Fig. 21. *Lozotœnia ribeana* (the common oblique bar).
„ Fig. 22. *Lozotœnia grossulareana* (gooseberry).
„ Fig. 23. *Lozotœnia cerasana* (the hollow oblique bar). 24. The Caterpillar. 25. The Cocoon.
„ Fig. 26. *Lozotœnia corylana* (great chequered).
„ Fig. 27. *Lozotœnia croceana* (saffron).
„ Fig. 28. *Lozotœnia lævigana* (glossy oblique bar).

The whole of the insects in this plate are from the cabinet of Mr. Bentley. The caterpillars, with the exception of that of Prasinana, from Sepp, are from Hübner. H. N. H.

HYLOPHILA, Hübner, Stephens. HALIAS, Treitschke, Curtis.

The insects of this genus are the largest belonging to the present family, and are further distinguished by the lovely green colour of their fore wings, marked with pale oblique stripes. They, however, offer a striking instance that the largest and most conspicuous insects in a group are not to be necessarily considered as its pre-eminent types; indeed, the very circumstance of their gigantic size is of itself one proof of aberration.

* See my article on the habits of this insect, in "Loudon's Gardeners' Magazine," January, 1838.
+ See my article on this species, in the same Magazine, for September, 1837.

These insects, moreover, in all their states, present further characters remarkably aberrant from the great majority of the family. The head is furnished with an elongated spiral tongue; the labial palpi are slender; the caterpillars naked, and gradually becoming more slender towards the tail (hence named by Réaumur "chenilles en forme de poisson"); the cocoon is in the shape of a boat reversed, attached to a leaf; and the chrysalis is not furnished with the transverse rows of reflexed spines on the abdominal rings, whereby, in the majority, the insects in this state are able to protrude themselves from their cocoons.

SPECIES 1.—HYLOPHILA PRASINANA[a].—(Plate LXXIX., Figs. 1, 2, 3.)—Measures from 1¼ to 1½ inch in expanse; fore wings pea-green, with three oblique silvery bars; the first occasionally nearly obsolete, and the third rather curved, and extending to the apical angle of the wings; the male has the hind wings pale greenish-buff. The caterpillar is pale green, with black dots, and with a pale yellow line above the feet on each side. It feeds on the oak, ash, and other trees; and the moth appears in May and June, and is very common in woods.

[a] SYNONYMES.—*Tortrix prasinana*, Wien. Verz.; Linnæus; Wilkes, 6, pl. 13; Albin, pl. 31; Harris, Aurelian, pl. 10, fig. i—m; Hübner; Stephens, Illustr.; Wood, fig. 841. | *Pyralis fagana*, Fabricius; Haworth; Donovan, 8, pl. 280. *Pyralis sylvana*, Fabricius (male).

SPECIES 2.—HYLOPHILA QUERCANA[b].—(Plate LXXIX., Figs. 4, 5, 6.)—Measures from 1⅔ to 2 inches in expanse; fore wings grass-green, with two slender oblique white, or pale-yellowish strigæ; hind wings glossy white. The caterpillar is pale green, with a slender yellow line on each side of the abdominal segments. It feeds on the oak and alder; and the moth appears in June and July, in woods, but is much rarer than the preceding species.

[b] SYNONYMES.—*Pyralis quercana*, Wien. Verz.; Hübner; Harris, Aurelian, pl. 30, fig. e—h; Curtis, Brit. Ent., pl. 575; Stephens, Ill.; Wood, fig. 842. | *Pyralis prasinaria*, Fabricius; Donovan, 2, pl. 40; fig. sup. Haworth; Stephens, Cat.

EARIS, HÜBNER, STEPHENS. HALIAS, PARS, CURTIS.

The type of this genus is very nearly allied to the two last-described insects, especially in its preparatory states; but has the palpi shorter and stouter, with the middle joint more squamose; the antennæ slightly pubescent beneath in the males; the fore wings not traversed by pale oblique strigæ. The caterpillar attenuated at each extremity; feeding, according to Duponchel, amongst the leaves at the extremity of the twigs of sallows, which it unites with threads.

SPECIES 1.—EARIS CHLORANA[c].—(Plate LXXIX., Figs. 7, 8, 9.)—Measures rather more than ¾ inch in expanse; fore wings pea-green, with a white costa; hind wings shining white. The caterpillar is obscure green, with a pale line on each side, and the belly reddish-brown. It feeds on sallows and willows; and the moth appears in June and July, and frequents willow beds, but is not common.

[c] SYNONYME.—*Phalæna Tortrix chlorana*, Linnæus; Hübner; Wilkes, 4, pl. 5; Haworth; Stephens; Wood, fig. 843.

TORTRIX, LINNÆUS.

These insects have the antennæ pubescent beneath, in the males; the labial palpi porrected, compressed, and very broad in the middle; the spiral tongue shorter than the palpi; the head thickly tufted; the wings, when closed, forming an ovate triangle; the fore ones destitute of strigæ or borders. The caterpillars are 16-footed; they reside within a convoluted leaf; and the chrysalis has the abdominal segments serrated.

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SPECIES 1.—TORTRIX VIRIDANA[d].—(Plate LXXIX., Fig. 10.)—Measures from 7 to 13 lines in expanse; fore wings green, with the costa slightly whitish; hind wings ashy-brown. The caterpillar is dull green, with dusky dots. It feeds on the leaves of the oak; occurring, in some seasons, in such immense profusion that the oak-wood are almost entirely defoliated—"not a perfect leaf, nay, hardly the rib of one, being left, in consequence of which myriads of the caterpillars perish through want"—Nature thus curing the calamity in her own way; so that, in the seasons following these swarms, it sometimes occurs that the species becomes so rare that scarce a single specimen is to be found in places where, the season before, thousands swarmed on every oak: so that, on skaking the branches, the moths are dislodged, flickering about like flakes of snow in a violent storm.

[d] SYNONYME.—*Phalæna Tortrix viridana*, Linnæus; Hübner; Albin, pl. 72, fig. e—h; Harris, Aurelian, pl. 10, 1, 2, y, z; Donovan, 4, pl. 144; Haworth; Stephens; Wood, fig. 844.

SPECIES 2.—TORTRIX PALLEANA[e].—(Plate LXXIX., Fig. 11.)—Measures $\frac{3}{4}$ inch in expanse; the fore wings rather dark straw-coloured, with whitish fringe; and the hind wings dusky straw-coloured, with paler cilia. Taken in July and August, near Dover.

[e] SYNONYMES.—*Tortrix palleana*, Treitschke; Stephens, Illustr.; Wood, fig. 846.
Tortrix flavana, Hübner; Haworth; Stephens, Catal.

SPECIES 3.—TORTRIX VIBURNANA[f].—(Plate LXXIX., Fig. 12.)—Measures 9 or 10 lines in expanse; fore wings greyish-brown and shining, with a yellowish tinge; hind wings ashy-brown; fringe of all the wings whitish. Widely dispersed, but not common in July.

[f] SYNONYMES.—*Phalæna virburnana*, Wien. Verz.; Treitschke, Stephens, Illustr.; Wood, fig. 847.
Tortrix unitana, Hübner; Stephens, Catal.

SPECIES 4.—TORTRIX PILLERANA[g].—(Plate LXXIX., Figs. 13, 14.)—Measures nearly 1 inch in expanse; fore wings of the male golden-brown; those of the female narrower and more acute, and of a dusky-brown colour; hind wings dusky with paler fringes. Found in Whittlesea Mere, in June.

Obs.—It seems doubtful whether this can be the true T. pillerana, as that species is described and figured with golden-coloured fore wings, having two oblique brown fasciæ; but Fabricius describes a variety with the wings nearly entirely golden-coloured, without the fasciæ.

[g] SYNONYMES.—*Tortrix pillerana*, Wien. Verz.; Hübner; Fabricius; Stephens, Ill., 4, 396.
Tortrix luteolana, Hübner; Wood, fig. 1677.

SPECIES 5.—TORTRIX GALEANA[h].—(Plate LXXIX., Figs. 15, 16.)—Measures about 10 lines in expanse; fore wings of the male glossy golden-mouse colour, with obscure rusty patches; female with the hind wings narrow, with the apex more acute, slightly reticulated, rusty, with a broad, dark brown, oblique bar across them, not extending to the hinder margin; costa also with a longitudinal dark dash. A very widely-dispersed species, but not common. (New Forest, Whittlesea Mere, Isle of Skye, etc.)

[h] SYNONYME.—*Tortrix Galeana*, Bentley; Curtis, Brit. Ent., pl. 763; Stephens; Wood, fig. 845.

LOZOTŒNIA, STEPHENS. TORTRIX, PARS, CURTIS.

Mr. Stephens has separated the preceding insects from Tortrix, chiefly on account of the reticulations and oblique fasciæ with which the fore wings of the majority are ornamented. They are for the most part of brown tints varied with red or yellow. The palpi are broad and compressed, the head tufted, the front and the fore

wings with the tips generally produced into a prominent angle. Most of the species are of comparatively large size; they are the types of Haworth's 7th section, named Obliquanæ, and from the oblique bars on the fore wings. Mr. Bentley has published a valuable revision of the species in the "Zoologist," p. 995.

SPECIES 1.—LOZOTŒNIA FORSTERANA[i].—(Plate LXXIX., Fig. 17.)—Measures 1½ inch in expanse; fore wings obtuse, ashy-brown, with a dark brown patch in the middle of the costa, another towards the extremity of the costa, and a third near the hinder margin, forming with the two others a triangle; the disk of the wing slightly reticulated. Hind wings pale grey-brown. Taken in woods, in June, but not common.

[i] SYNONYME.—*Pyralis Forsterana*, Fabricius; Haworth; Albin, pl. 62, fig. a—d; Stephens; Wood, fig. 848.

SPECIES 2.—LOZOTŒNIA SORBIANA[j].—(Plate LXXIX., Fig. 18.)—Varies from 10 to 15 lines in expanse; fore wings obtuse, golden-brown, with the base darker, terminating in an oblique line; the middle of the costa with a brown patch, which is dilated behind into a broad oblique fascia, from which it is sometimes separated; another brown patch towards the extremity of the costa, disk slightly reticulated; hind wings dark brown, with a pale fringe. The caterpillar feeds on oak, birch, etc.; and the moth appears in woods, in July

[j] SYNONYMES.—*Tortrix Sorbiana*, Hübner; Curtis; Stephens; Wood, fig. 849.
Phalæna Tortrix avellana, Linnæus; Haworth; Stephens, Cat.

SPECIES 3.—LOZOTŒNIA HEPARANA[k].—(Plate LXXIX., Fig. 19.)—Varies from ⅔ to nearly 1 inch in expanse; fore wings retuse, red-brown, scarcely reticulated, with a more or less distinct dusky fascia at the base; a second oblique broad fascia running from the middle of the costa nearly to the extremity of the hinder margin, angulated on the inside beyond the middle; and a dusky patch near the extremity of the costa; hind wings reddish-brown; very variable both in the prevailing tint of the wings and in the strength of the markings. A very common insect in woods in June or July, the larvæ feeding on the oak, hazel, etc.

[k] SYNONYMES.—*Phalæna Tortrix Heparana*, Wien. Verz.; Treitschke; Stephens, Illustr.; Wood, fig. 850.
Tortrix Carpiniana, Hubner; Haworth.
Pyralis fasciana, Fabricius (variety).
Pyralis Pasquagana, Fabricius (variety).

SPECIES 4.—LOZOTŒNIA CINNAMOMEANA[l].—(Plate LXXIX., Fig. 20.)—Measures about ¾ of an inch in expanse; fore wings cinnamon coloured, with a basal dark fascia, an oblique dark fascia, and a subapical costal spot, all edged with pale cinnamon; the middle fascia rather angulated; hind wings dull brown; head, antennæ, and palpi whitish. Coombe Wood, in June. Very rare.

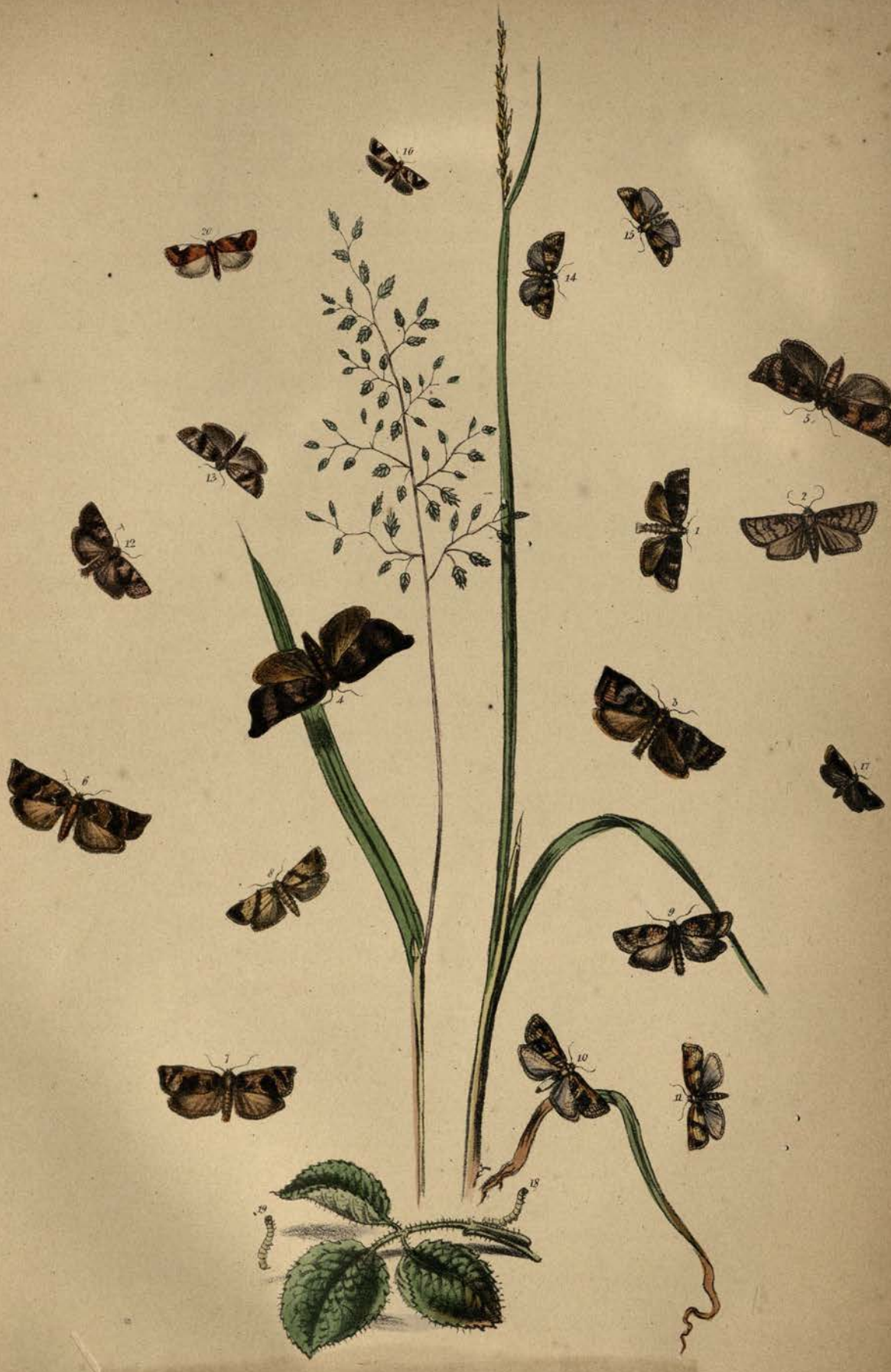
[l] SYNONYME.—*Tortrix cinnamomeana*, Treitschke; Stephens; Wood, fig. 851.

SPECIES 5.—LOZOTŒNIA RIBEANA[m].—(Plate LXXIX., Fig. 21.)—Measures 7—11 lines in expanse; fore wings testaceous-yellow, with a basal fascia externally angulated; another oblique entire one across the middle, and a subapical dusky costal spot, all margined with brown; hind wings brown. This species is very similar to T. Heparana, but differs chiefly in colour. It also varies greatly in size, as well as in the strength of its markings. Common in woods and gardens, in June; the caterpillar feeding on the currant, gooseberry, bramble, etc.

[m] SYNONYME.—*Tortrix Ribeana*, Hübner; Haworth; Stephens; Wood, fig. 852.

SPECIES 6.—LOZOTŒNIA GROSSULARIANA[n].—(Plate LXXIX., Fig. 22.)—Measures from 8 to 11 lines in expanse; fore wings dull, testaceous-yellow or ochreous without reticulations, with a waved red-brown bar at the base; an oblique, red-brown, anteriorly-waved bar across the middle, and a red-brown patch near the extremity of the costa; hind wings brownish. Taken in woods and gardens in June; the caterpillar feeding on the currant and gooseberry.

[n] SYNONYME.—*Lozotænia grossulariana*, Wood, fig. 853.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SPECIES 7.—LOZOTŒNIA CERASANA[o].—(Plate LXXIX., Figs. 23, 24, 25.)—Measures 9 or 10 lines in expanse; fore wings retuse, testaceous; the basal part irrorated with ashy-brown, and with two fasciæ, the outer one oblique, with its inner part darker, and a spot on the costa, near the extremity, of testaceous-ashy, margined with brown; hind wings brown. The caterpillar is greenish, with pale dots and lateral lines, and slightly hairy; it feeds on oak, hazel, etc., and the moth appears in June, and is not uncommon in woods.

[o] SYNONYME.—*Lozotœnia cerasana*, Hübner; Haworth; Stephens; Wood, fig. 854.

SPECIES 8.—LOZOTŒNIA CORYLANA[p].—(Plate LXXIX., Fig. 26.)—Measures 10 or 12 lines in expanse; fore wings retuse, testaceous, reticulated with ferruginous, with three oblique ferruginous strigæ placed at unequal distances apart, the first towards the base, the second and third approximated together, and running obliquely across the middle of the wing, nearly to the anal angle, and sometimes with a fourth abbreviated striga between these and the tip of the wings; hind wings brown, with the outer angle broadly whitish, with numerous transverse brownish lineolæ; occasionally entirely brownish, and sometimes nearly all yellowish. The caterpillar feeds on birch, hazel, etc., and the moth appears about the end of June, in woods, but is not very common.

[p] SYNONYMES.—*Pyralis corylana*, Fabricius: Haworth; Stephens; Wood, fig. 855.
Tortrix textana, Hübner.

SPECIES 9.—LOZOTŒNIA CROCEANA[q].—(Plate LXXIX., Fig. 27.)—Varies from 5½ to 9½ lines in expanse; fore wings rather narrow, obtuse, dusky-red, with a suffused, oblique, dusky striga across the middle, extending nearly to the anal angle, where it is darkest, and with a dark spot on the inner margin towards the base; the markings are very variable, being obliterated in several of the varieties described by Mr. Haworth, all of which, together with a number of the typical individuals of other species of this family, described by that gentleman, are in my collection. Taken in woods in June.

[q] SYNONYME.—*Tortrix croceana*, Hübner; Haworth; Stephens; Wood, fig. 856.

SPECIES 10.—LOZOTŒNIA LÆVIGANA[r].—(Plate LXXIX., Fig. 28.)—Measures from 7 to 9 lines in expanse; fore wings with a satiny gloss greyish red-brown or brown, slightly reticulated with an ill-defined central fascia, and sometimes obsolete; an obscure patch near the base of the inner margin, and another near the extremity of the costa, but these are sometimes obsolete; hind wings brown, with the outer angle orange—very variable. Common in hedges and gardens in June, the larvæ feeding on the buds of the rose.

[r] SYNONYMES.—*Tortrix lævigana*, Wien. Verz.; Fabricius; Stephens; Wood, fig. 857.
Tortrix oxyacanthana, Hübner; Haworth (variety).
Tortrix viburnana, Haworth (variety).

DESCRIPTION OF PLATE LXXX.

INSECTS.—Fig. 1. Lozotœnia nebulana (the rose tortrix).
„ Fig. 2. Lozotœnia subocellana (the ocellated oblique bar).
„ Fig. 3. Lozotœnia rosana (the great brown).
„ Fig. 4. Lozotœnia cratægana (the hazel-barred).
„ Fig. 5. Lozotœnia oporana (the great hook-tip).
„ Fig. 6. Lozotœnia xylosteana (the forked red-bar).
„ Fig. 7. Lozotœnia roborana (the oak red-bar).
„ Fig. 8. Lozotœnia obliquana (the oblique bar).
„ Fig. 9. Lozotœnia costana (the straw oblique bar).
„ Fig. 10. Lozotœnia biustulana (the double-spotted oblique bar).
„ Fig. 11. Lozotœnia Modeeriana (Modeer's bar).
„ Fig. 12. Lozotœnia acerana (the maple).
INSECTS.—Fig. 13. Lozotœnia trifasciana (the afternoon tortrix).
„ Fig. 14. Lozotœnia Grotiana (the Grotian tortrix).
„ Fig. 15. Lozotœnia ochreana (the saffron).
„ Fig. 16. Lozotœnia cruciana (the red cross).
„ Fig. 17. Lozotœnia Holmiana (the Holmian). 18, 19. The Caterpillars.
„ Fig. 20. Lozotœnia Schreberiana (the Schreberian).

L. ochreana and subocellana are from Mr. Stephens's specimens, as figured by Wood. The rest of the insects in the plate are from the cabinet of Mr. Bentley. The two caterpillars of L. Holmiana are from Hübner. H. N. H.

SPECIES 11.—LOZOTŒNIA NEBULANA[s].—(Plate LXXX., Fig. 1.)—Measures from 7 to 9 lines in expanse; fore wings broad, retuse, reddish-brown, with a rather arched but nearly obsolete striga near the base; a central oblique fascia dilated behind, a costal patch near the extremity of the wings, and transverse abbreviated lineolæ, all ferruginous, with a purplish gloss; hind wings brown, with the outer portion golden coloured. Very variable, the markings being sometimes nearly obliterated, and the golden colour of the hind wings is sometimes quite wanting. Common in hedges and gardens in June, the caterpillar feeding on the rose, raspberry, etc.

[s] SYNONYMES.—*Lozotænia nebulana*, Stephens, Illustr., but not of Donovan and Haworth; Wood, fig. 858.
Tortrix rosana, Haworth; Stephens, Catal.
Phalæna ameriana, Villers.

SPECIES 12.—LOZOTŒNIA SUBOCELLANA[t].—(Plate LXXX., Fig. 2.)—Measures 10 lines in expanse; fore wings brownish-leaden coloured, reticulated with interrupted deep black lines, the interstices, as if faintly ocellated; near the base is a faint black streak, and an oblique more distinct one in the middle; posterior wings brownish. Rare; from the south-west of England.

[t] SYNONYME.—*Lozotænia subocellana*, Stephens; Wood, fig. 839.

SPECIES 13.—LOZOTŒNIA OPERANA[u].—(Plate LXXX., Fig. 5.)—Measures from 10 to 13 lines in expanse; fore wings brownish-red with a luteous tinge, thickly reticulated with slender transverse lineolæ; a slender incurved line near the base, followed by an oblique one, beyond which is a darker-coloured space, especially towards the inner margin of the wing, and with a corresponding patch of dark red-brown on the costa followed by several slender transverse or incurved strigæ; hind wings brown with the outer angle orange coloured. The tip of the fore wings is much produced, and the disk varies from ferruginous to smoky-brown, with a purple tinge. Taken in hedges and gardens in June, the caterpillar feeding on the rose, bramble, etc.

[u] SYNONYMES.—*Phalæna Tortrix operana*, Linnæus; Wilkes, 17, pl. 34; Albin, pl. 36, fig. 58; Haworth; Hubner; Stephens; Wood, fig. 860.
Tortrix Hermanniana, Wien. Verz.

SPECIES 14.—LOZOTŒNIA ROSANA[v].—(Plate LXXX., Fig. 3.)—Measures from 8 to 10 lines in expanse; fore wings of the male ferruginous-brown, with an oblong dark patch near the base on the inner margin, terminating on the disk in an ear-shaped ashy patch, followed by an oblique rich brown fascia and a costal oblong streak; also an acuminated submarginal stripe; the extreme apex of the wings dark brown; hind wings brown, with the outer angle orange; female dark grey-brown, with an obscure central patch, and a faint streak near the apical margin. The male varies considerably in the ground-colour of the fore wings. Found in gardens in June. The caterpillar feeds on the rose, raspberry, etc.

[v] SYNONYMES.—*Phalæna Tortrix rosana*, Linnæus; Stephens, Illustr.; Wood, fig. 861 (m and f).
Tortrix fulvana, Wien. Verz.; Stephens, Catal.
Tortrix pyrastrana, Hübner.
Tortrix Gerningana, Haworth.
Tortrix fuscana, Fabricius; Haworth (femaie).

SPECIES 15.—LOZOTŒNIA CRATÆGANA[w].—(Plate LXXX., Fig. 4.)—Measures 11 or 12 lines in expanse; fore wings red, with a greyish tinge; the apical angle considerably produced; a patch of darker brown near the base of the inner margin; an oblique fascia of the same colour, greatly dilated behind, runs across the wings, and an acuminated striga extends from near the extremity of the costa to the middle of the apical margin; hind wings brown, with a luteous patch on the outer angle. Taken near London, and in the New Forest, in June. The caterpillar feeds on the whitethorn.

[w] SYNONYMES.—*Tortrix cratægana*, Hübner; Stephens, Illustr.
Phalæna Tortrix Branderiana, Linnæus; Haworth; Wood, fig. 862.

SPECIES 16.—LOZOTŒNIA XYLOSTEANA[x].—(Plate LXXX., Fig. 6.)—Varies from 7 to 10 lines in expanse; fore wings retuse; the apex slightly produced; pale testaceous, with a greyish shining tinge; inner margin, near the base, with an oblique dark chestnut bar, extending towards the middle of the disk of the wing, followed by an oblique broader bar of the same colour, running in the contrary direction, and greatly dilated behind, and throwing off a branch to the costa; a submarginal brown striga, and the tip of the wing also brown; the brown bars edged with pale shining ashy. Variable in depth of colour and markings. The caterpillar feeds on the honeysuckle, oak, whitethorn, etc.; and the moth appears about the end of June, in woods.

[x] SYNONYMES.—*Phalæna Tortrix xylosteana*, Linnæus; Haworth; Stephens; Wood, fig. 863.
Tortrix characterana, Hübner.

SPECIES 17.—LOZOTŒNIA ROBORANA[y].—(Plate LXXX., Fig. 7.)—This handsome insect measures from 9 to 11 lines in expanse; and has the fore wings but slightly produced at the apex, ochreous-red, with a large rich brown patch near the base of the inner margin; a large oblique mark in the middle of the wing, of the same colour, and a subapical costal patch attenuated behind, and extending to the middle of the apical margin; three dark patches edged with shining ashy-white lines. Taken in woods, at the beginning of July; the caterpillar feeding upon oaks.

[y] SYNONYMES.—*Tortrix roborana*, Hübner; Stephens; Wood, fig. 864.
Tortrix xylosteana, ♂, Treitschke.

SPECIES 18.—LOZOTŒNIA OBLIQUANA[z].—(Plate LXXX., Fig. 8.)—Varies from 8 to 11 lines in expanse; fore wings of a pale fulvescent ashy tint, with a nearly straight fulvous fascia near the base, obsoletely margined with pale buff; a second oblique one across the middle, extending nearly to the anal angle, outwardly 1-dentate and margined with buff; and between the front of this and the apex is a costal fulvous patch; the tip itself often with a burnt-brown spot; hind wings brown, with the apical and costal portions fulvous. The fulvous fasciæ are sometimes very obscure, and the disk very pale. Very rare; taken in the woods of Kent and Surrey. I possess Haworth's specimen of this species.

[z] SYNONYME.—*Pyralis obliquana*, Fabricius; Harris, Aurelian, pl. 41; Haworth; Stephens; Wood, fig. 865.

SPECIES 19.—LOZOTŒNIA COSTANA[a].—(Plate LXXX., Fig. 9.)—Measures from 8 to 12 lines in expanse; fore wings straw coloured; the base, especially towards the costa, ashy; a grey fascia running from the middle of the costa to the anal angle, being much darker towards the costa, and a blackish spot towards the extremity of the costa; along the apical margin are from two to five blackish dots; hind wings pale buff; those of the female more dusky. Taken in various places round London, in June; but rare.

[a] SYNONYMES.—*Pyralis costana*, Fabricius; Haworth; Stephens; Wood, fig. 866.
Tortrix gnomana, Hübner.
Phalæna Tortr. Betulana, Donovan, xi., pl. 369, f. 2.
Tortrix spectrana, Treitschke.

SPECIES 20.—LOZOTŒNIA BIUSTULANA[b].—(Plate LXXX., Fig. 10.)—Measures 8 lines in expanse; fore wings "ochry-yellow, with a faint streak at the base, a large blotch at the anal angle, arising from a slender streak on the costa, and another blotch at the apex of the costa, of an ustulated brown; cilia ochreous; posterior wings whitish-ash."—Stephens, loc. cit. Supposed to have been captured in the west of England. [Mr. Henry Doubleday states that this is "a native of North America."]

[b] SYNONYME.—*Lozotœnia biustulana*, Stephens; Wood, fig. 867.

SPECIES 21.—LOZOTŒNIA MODEERIANA[c].—(Plate LXXX., Fig. 11.)—Measures ¾ inch in expanse; fore wings yellowish or straw coloured, with an obsolete fulvous spot near the base; an oblique ashy fascia across the middle of the wing, becoming narrower and interrupted towards the costa; the extremity of which last has a

fulvous patch, emitting a curved line, which reaches to the anal angle; hind wings white, with the anal margin broadly ashy. Very rare. Darenth Wood, Kent, in July.

[c] Synonyme.—*Phalæna Tortrix Modeeriana*, Linnæus; Haworth; Stephens; Wood, fig. 868.

Species 22.—Lozotœnia acerana[d].—(Plate LXXX., Fig. 12.)—Measures 8 or 9 lines in expanse; fore wings oblong, obtuse, brownish or reddish, with a somewhat arched striga at the base, and oblique fascia in the middle, greatly dilated on the inner margin, and a spot on the costa, near the extremity, of a darker colour; hind wings brown; fringe brown, with the tips whitish. Found in the woods of the south of England in June; but not a common species.

[d] Synonyme.—*Tortrix acerana*, Hübner; Haworth; Stephens; Wood, fig. 869.

Species 23.—Lozotœnia 'trifasciana[e].—(Plate LXXX., Fig. 13.)—Measures 8 or 9 lines in expanse; fore wings pale ashy, shining; the base darker, with an incurved blackish striga, followed by an oblique brown fascia, very much dilated behind, and edged with black scales, and a patch on the costa towards the apex, from which, in fine specimens, runs an obsolete striga of black dots; hind wings brown, with whitish fringe. The markings differ much in intensity, whence the series of varieties described by Mr. Haworth, and now in my collection. Taken in the woods of the south of England, in June; but rare.

[e] Synonyme.—*Pyralis trifasciana*, Fabricius; Haworth; Stephens; Wood, fig. 870.

Species 24.—Lozotœnia grotiana[f].—(Plate LXXX., Fig. 14.)—Measures 7 or 8 lines in expanse; fore wings obtuse, golden-tawny, finely reticulated, and with a nearly obsolete bar near the base, and a broad sub-central fascia of dark brown furcate towards the costa, leaving a pale, triangular, costal patch; hind wings brown. Found at the same time and places as the last two species.

[f] Synonyme.—*Pyralis Grotiana*, Fabricius; Haworth; Stephens; Wood, fig. 871.

Species 25.—Lozotœnia ochreana[g].—(Plate LXXX., Fig. 15.)—Measures about ⅝ inch in expanse; fore wings golden-yellow, very faintly reticulated with ferruginous; a broad rusty fascia across the middle, greatly dilated behind, and branching upwards rather indistinctly towards the extremity of the costa, where is a dusky patch; hind wings ashy-brown. Taken at the end of June, near London.

[g] Synonyme.—*Tortrix ochreana*, Hübner; Stephens, Illustr.; Wood, fig. 872.

Species 26.—Lozotœnia cruciana[h].—(Plate LXXX., Fig. 16.)—Measures 6 or 7 lines in expanse; fore wings narrow, ashy-grey or hoary, glossy; rusty-brown at the base, and a very broad, oblique, ferruginous or chestnut fascia beyond the middle, uniting with a marginal bar of the same colour, edged with a faint glossy line; hind wings brown; fringe purple, with the tips whiter. Found in woods, in June; but rather uncommon.

[h] Synonymes.—*Phalæna Tortrix cruciana*, Linnæus; Haworth; Stephens; Wood, fig. 873. | *Pyralis cinerana*, Fabricius. *Tortrix angustana*, Hübner.

Species 27.—Lozotœnia holmiana[i].—(Plate LXXX., Figs. 17, 18, 19.)—Measures from 4 to 7 lines in expanse; fore wings rusty-clay, slightly irrorated with lead colour towards the tips, and having a white angulated spot on the middle of the costa. Common in gardens and hedges, about the end of June.

[i] Synonyme.—*Phalæna Tortrix Holmiana*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 847.

Species 28.—Lozotœnia schreberiana[j].—(Plate LXXX., Fig. 20.)—Measures nearly ¼ inch in expanse; fore wings rusty-grey, with a broad obscure patch beyond the middle, and a triangular spot in the middle of the costa; the apex with a pale streak; hind wings pale brown, with the base paler. Very rare; Cornwall. [This insect bears no resemblance to the Linnæan species, except in having a white costal spot; it is Sericoris trileucana, Gn., a common American species.]

[j] Synonyme.—*Phal. Tortr. Schreberiana*, Linn. (?); Panzer (?); Stephens; Wood, fig. 875.

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DESCRIPTION OF PLATE LXXXI.

INSECTS.—Fig. 1. Philedone Gerningiana (the Gerningian).
„ Fig. 2. Philedone Walkerana (the Walkerian).
„ Fig. 3. Pædisca rotundana (round tipped red-bar).
„ Fig. 4. Pædisca angustiorana (narrow winged red-bar).
„ Fig. 5. Pædisca sylvana (the red blotch-back).
„ Fig. 6. Pædisca porphyrana (bright oblique barred).
„ Fig. 7. Pædisca nebulana (clouded iron).
„ Fig. 8. Pædisca Wellensiana (the barred blotch-back).
„ Fig. 9. Pædisca æthiopiana (the Negro).
„ Fig. 10. Pædisca scriptana (the short barred white).
„ Fig. 11. Pædisca semifasciana (the short barred grey).
„ Fig. 12. Anthithesia corticana (the marbled long cloak).
„ Fig. 13. Anthithesia betulana (the birch long cloak).

INSECTS.—Fig. 14. Anthithesia tripunctana (the common long-cloak
„ Fig. 15. Anthithesia pruniana (the lesser long-cloak). 16. The Caterpillar.
„ Fig. 17. Anthithesia pullana (the dingy marbled).
„ Fig. 18. Anthithesia marginana (the bordered long cloak).
„ Fig. 19. Anthithesia oblongana (the narrow long cloak).
„ Fig. 20. Anthithesia gentianænana (the Gentian). 21. The Caterpillar.
„ Fig. 22. Anthithesia salicella (the white backed).

The whole of the insects in this plate are from the cabinet of Mr Bentley, with the exception of P. sylvana and P. Walkerana, which are copied from the figures of Wood. The caterpillars are from Hübner.

H. N. H.

PHILEDONE, HÜBNER, STEPHENR. AMPHISA, CURTIS.

The antennæ in this genus are either bipectinated, the bipectinations being hairy, or the joints have tufts of hairs on each side; the spiral tongue is short; the fore wings narrowed at the base, truncated very obliquely, and with the costal margin slightly emarginate; the disk bearing an oblique fascia, and a patch at the extremity of the costa.

SPECIES 1.—PHILEDONE GERNINGIANA[k].—(Plate LXXXI., Fig. 1.)—Measures from 6 to 8 lines in expanse; fore wings pale fulvous or brownish, irrorated with tawny-orange; an oblique chestnut-brown bar across the middle, followed by a pale streak and an apical brown patch; hind wings brown. Found near Birmingham, and in several parts of Scotland, in June.

[k] SYNONYMES.—*Tortrix Gerningiana*, Fabricius; Stephens; Wood, fig. 876 but not of Haworth.
Tortrix pectinaria, Hübner; Curtis.

SPECIES 2.—PHILEDONE WALKERANA[l].—(Plate LXXXI., Fig. 2.)—Measures 8 lines in expanse; fore wings pale, sometimes dark grey-brown towards the base, with a large triangular dusky red spot, broadest towards the costa, where it bears an oblique, oblong, grey spot, and a small one at the apex; hind wings ochraceous, spotted with brown, darkest at the base. Taken near Lanark, by H. Walker, Esq.

[l] SYNONYME.—*Amphisa Walkerana*, Curtis, Brit. Ent., pl. 209; Wood, fig. 877.

PÆDISCA, TREITSCHKE. DITULA, STEPHENS.

The antennæ are setaceous, clothed beneath with scales; the spiral tongue short: the palpi porrected and bent upwards; the fore wings slightly deflexed whilst at rest; the costa arched, and the apical margin rounded, the disk marked with oblique bars or lines, the thorax with a bifid crest behind; the first three species are arranged by Curtis with the Lozotœniæ, to which they are certainly much nearer allied than the remainder of the genus.

SPECIES 1.—PÆDISCA ROTUNDANA[m].—(Plate LXXXI., Fig. 3.)—Measures about ½ an inch in expanse; fore wings obtusely rounded, smoky-brown, with a rusty-brown mark at the base; an oblique central fascia also brown, and beyond this an oblique, posterior, abbreviated, undulated fascia: hind wings black. Widely dispersed; but not common.

[m] SYNONYMES.—*Tortrix rotundana*, Haworth; Stephens; Wood, fig. 878.
Tortrix angustiorana, (variety); Curtis,

SPECIES 2.—PÆDISCA ANGUSTIORANA[n].—(Plate LXXXI., Fig. 4.)—Varies from 6 to 8 lines in expanse; fore wings narrow, oblong, obtuse, of a dusky-reddish colour, with a red-brown spot at the base next the inner

margin; an undulated fascia from the middle of the costa to the anal angle, and another red-brown, oblique, smaller, ustulated-brown fascia within the apical margin; the colours of the disk and fasciæ variable; hind wings black. A common and widely-dispersed species, found in woods and gardens; and especially destructive to wall-fruit trees in the spring, by the grub devouring the young shoots and blossom-buds, as described in detail in my article upon this species in Mr. Loudon's "Gardener's Magazine" above referred to. The antennæ of the male are pilose, thus approaching the genus Philedone.

[n] Synonyme.—*Tortrix angustiorana*, Haworth; Stephens; Wood, fig. 879; Westwood, in "Gardener's Magazine," January, 1838.

Species 3.—Pædisca sylvana[o].—(Plate LXXXI., Fig. 5.)—Measures 7 or 8 lines in expanse; fore wings chestnut or testaceous, paler towards the base, with darker testaceous strigæ slightly irrorated with silver, and with an oblique, abbreviated, central, costal fascia, which communicates with a whitish patch on the middle of the inner margin; female lighter colour; hind wings reddish-brown. Taken at Darenth Wood and in Norfolk; but rare.

[o] Synonyme.—*Tortrix sylvana*, Hübner; Haworth; Stephens; Wood, fig. 902.

Species 4.—Pædisca porphyriana[p].—(Plate LXXXI., Fig. 6.)—Measures 9 lines in expanse; fore wings glaucous-ashy, shining, with a large oblique fascia at the base, of a chestnut-brown colour, shiny and darker outwardly, slightly margined with white; a second very oblique and narrow bar extending from the middle of the costa to the anal angle, slightly waved and edged with white; a third fascia is formed of a sub-marginal row of spots, and the costa is marked with some brown dots; the hind wings dark. Taken in woods, about the end of June; but rare.

[p] Synonymes.—*Tortrix porphyriana*, Hübner; Haworth; Stephens; Wood, fig. 880.
Tortrix profundana, Wien. Verz.; Curtis.

Species 5.—Pædisca nebulana[q].—(Plate LXXXI., Fig. 7.)—Measures about $\frac{3}{4}$ of an inch in expanse; fore wings grey-brown; the base red-brown, mottled with darker and lighter scales, darkest towards the inner margin, beyond which is a greyish bar terminating in a whitish patch, followed by a broad, very irregular, oblique fascia, edged on the outside with a very slender white line; the terminal portion of the wings mottled with grey and brown, with a larger patch towards the apex. Taken in woods, in June.

[q] Synonyme.—*Phalæna Tortrix nebulana*, Donovan, xi., pl. 364, fig. 3; Haworth; Stephens; Wood, fig. 881.

Species 6.—Pædisca Wellensiana[r].—(Plate LXXXI., Fig. 8.)—Measures about $\frac{3}{4}$ of an inch in expanse; fore wings grey-brown; more or less tinged with ferruginous with a basal fascia, darkest towards the inner margin of the wings, followed on the same margin by a white spot, the outer edge of which forms a slender branch running up into the broad, irregular, suffused, oblique, central fascia, which is narrowed towards the costa, and marked across the middle with a black line, the apical portion of the costa dotted with brown, and the base with a lunate brown patch. Taken in woods, in July.

[r] Synonymes.—*Tortrix Wellensiana*, Hübner; Stephens; Wood, fig. 882.
Tortrix assiclana, Hübner; Haworth.
Tortrix scutulana, Wien. Verz.; Curtis.

Species 7.—Pædisca æthiopiana[s].—(Plate LXXXI., Fig. 9.)—Closely allied to the preceding, and probably only a suffused variety of it, having the fore wings blackish-brown, with a few dots on the costa, and an abbreviated striga at the anal angle, and the apical margin dirty brown; hind wings brown. Taken in woods with the last species.

[s] Synonyme.—*Tortrix æthiopiana*, Haworth; Stephens; Wood, fig. 883.

SPECIES 8.—PÆDISCA SCRIPTANA[t].—(Plate LXXXI., Fig. 10.)—Measures about $\frac{3}{4}$ inch in expanse; fore wings cream coloured or white, slightly clouded with grey, with a rather narrow dusky fascia towards the base, interrupted in the middle, succeeded by a broader central bar, also interrupted in the middle, where it bears a black dash; the apical portion slightly speckled with slight grey and brown markings; costa dotted with brown. Rare. Found near London and in Devonshire, in July.

[t] SYNONYMES.—*Tortrix scriptana*, Hübner; Haworth; Stephens; Wood, fig. 884.
Ph. Tortrix Hartmanniana, Linnæus.

SPECIES 9.—PÆDISCA SEMIFASCIANA[u].—(Plate LXXXI., Fig. 11.)—Measures about $\frac{3}{4}$ inch in expanse; fore wings pale ashy-grey with numerous short irregular traversing strigæ, an irregular brown fascia dotted with black towards the base, and a nearly square patch arising from the middle of the costa, and interrupted in the middle of the disk by a black line; some slight spots towards the extremity of the costa, and some irregular submarginal strigæ dotted with black; hind wings ochreous-brown. Taken in woods, in August, but rare.

[u] SYNONYME.—*Tortrix semifasciana*, Haworth; Stephens; Curtis, Brit. Ent., pl. 571; Wood, fig. 885.

ANTITHESIA, STEPHENS. PENTHINA, PARS, TREITSCHKE.

The antennæ are setaceous and pubescent beneath; the palpi porrected obliquely and bent upwards; the spiral tongue short; the wings slightly cylindrical and deflexed in repose; the anterior oblong, with the costa slightly arched, and the apical margin rounded. They are varied with black and white (whence the generic name), and when the moths are settled on a leaf with their wings lapped round them, they so much resemble the fæces of small birds (as suggested by Mr. Curtis), that it is often difficult to determine what they are.

SPECIES 1.—ANTITHESIA CORTICANA[v].—(Plate LXXXI., Fig. 12.)—Measures 9 or 10 lines in expanse; fore wings white, the basal portion varied with lead colour and black, the inner margin being of the former colour, extending nearly to the anal angle, and the middle of the wing with an irregular black fascia, the apical portion white, clouded with pale ashy, and with an irregular short striga of black dots within the apical margin; the costa also dotted with black. Taken in June, July, and September, in woods, but not common.

[v] SYNONYMES.—*Tortrix corticana*, Hübner; Haworth; Stephens; Wood, fig. 886.
Tortrix capreana, Hübner (male).

SPECIES 2.—ANTITHESIA BETULETANA[w].—(Plate LXXXI., Fig. 13.)—Measures 9 or 10 lines in expanse; fore wings with rather more than the basal half rich dark brown, mottled with lead colour and black, and terminated obliquely (extending to the anal angle); the apex white or ochreous, more or less clouded with pale ashy, and the costa with minute blackish specks; hind wings brown. Very common throughout the summer, in woods.

[w] SYNONYME.—*Tortrix Betuletana*, Haworth; Stephens; Wood, fig. 887.

SPECIES 3.—ANTITHESIA TRIPUNCTANA[x].—(Plate LXXXI., Fig. 14.)—Measures 9 or 10 lines in expanse; closely allied to the preceding, with the fore wings dusky or blackish at the base, with black and brown clouds terminating obliquely, but before reaching the anal angle, with two black dots on the middle of the hinder margin of the dark base, and a third at the apex; extremity of the wings white, clouded with ashy; costa slightly streaked with black. Taken in woods, in June and July; but not very common.

[x] SYNONYMES.—*Pyralis tripunctana*, (Fabricius?) Haworth; Stephens; Wood, fig. 888.
Tortrix variegana, Hubner.
Phalæna Cynosbana, Donovan, but not of Linnæus, etc.

SPECIES 4.—ANTITHESIA PRUNIANA[y].—(Plate LXXXI., Figs. 15, 16.)—Measures 7½ lines in expanse; fore wings blackish, obsoletely clouded with black, ashy and pitchy, with a broad white fascia towards the extremity of the wings, interrupted in the middle by a black spot, and with three conspicuous black dots on the costa; apical margin dusky; hind wings brown. Taken in woods and gardens in June, the caterpillar feeding on the sloe, birch, etc. It is green, with black dots.

[y] SYNONYME.—*Tortrix Pruniana*, Hübner; Haworth; Stephens; Wood, fig. 890.

SPECIES 5.—ANTITHESIA PULLANA[z].—(Plate LXXXI., Fig. 17.)—Measures rather more than ½ an inch in expanse; fore wings smoky-black, varied at the base with darker marks, and with a black central fascia, and apical margin of the same colour; hind wings pitchy-black. Taken near London, in June.

[z] SYNONYME.—*Tortrix pullana*, Haworth; Stephens; Wood, fig. 891.

SPECIES 6.—ANTITHESIA GREVILLANA[a].—Measures 8 lines in expanse; fore wings greyish-black, long and narrow, "variegated with interrupted, black, transverse lines and spots; a large space at the apex white, forming two claws on the internal margin, with a long, grey, oblique line, arising at the posterior angle, and furcate at the extremity; the apex black, with white dots, forming two oblique stripes; cilia black; inferior wings yellowish-fuscous, palest at base."—Curtis, op. cit. Taken in Sutherlandshire, in July.

[a] SYNONYME.—*Penthina Grevillana*, Curtis, Brit. Ent., pl. 567; Wood, fig. 889.

SPECIES 7.—ANTITHESIA MARGINANA[b].—(Plate LXXXI., Fig. 18.)—Measures rather more than ½ an inch in expanse; fore wings black, with the base obsoletely tinged with ashy towards the apex, with an ochraceous fascia, in the middle of which is an ashy patch, on which are six or eight very minute black dots placed close together; hind wings whitish, with the margin brown. Taken in the woods, in July, but rare.

[b] SYNONYME.—*Tortrix marginana*, Haworth; Stephens; Wood, fig. 892.

SPECIES 8.—ANTITHESIA OBLONGANA[c].—(Plate LXXXI., Fig. 19.)—Measures about 7 lines in expanse; fore wings oblong, black towards the base, clouded with ashy, and with a whitish-ochraceous fascia beyond the middle, in the middle of which is sometimes an insulated ashy-brown patch; hind wings deep brown. Taken in woods, in July, but rare.

[c] SYNONYME.—*Tortrix oblongana*, Haworth; Stephens; Wood, fig. 893.

SPECIES 9.—ANTITHESIA GENTIANÆANA[d].—(Plate LXXXI., Figs. 20, 21.)—Measures 8 lines in expanse; fore wings rather narrow, brownish, very much mottled with brown and grey patches, black dots, and small whitish dashes; beyond the middle a paler fascia extending to the anal angle, dotted with rusty-brown on the costa, and bearing a short submarginal streak formed of black dots; the margin itself brown: widely dispersed, but very rare. My specimen is from Sir P. Walker's collection. The caterpillar feeds on the teazel, and is whitish, with a black head and neck. The moth appears in August.

[d] SYNONYME.—*Tortrix Gentianæana*, Hübner; Haworth; Stephens; Wood, fig. 894.

SPECIES 10.—ANEITHSIA SALICELLA[d].—(Plate LXXI., Fig. 22.)—Measures 9 to 11 lines in expanse; fore wings with the anterior margin and the apex beautifully mottled with brown, black, white, and shining steel patches; hinder margin white, extending nearly to the anal angle, and marked at the base with a dark dot, the following space very slightly clouded: hind wings dark brown, with pale fringe. The caterpillar feeds on

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various kinds of willows; it is robust and pale brown, with a black head. The moth is found about the end of July and in August, on the trunks of willows and sallows, but is not common.

[e] SYNONYMES.—*Phalæna Tinea Salicella*, Linnæus; Roesel, pl. 95, 1—4; Wilkes, pl. 10; Hübner; Haworth; Stephens; Wood, fig. 895.

SPECIES 11.—ANTITHESIA GREVILLIANA.—(Curtis, Brit. Ent., pl. 567.) Expands 8 lines; fore wings long and narrow, variegated with interrupted, black, transverse lines of spots; a large space at the apex white, forming two claws on the internal margin, with a long, grey, oblique line, arising at the posterior angle, and furcate at the extremity of the apex; black, with white dots, forming two oblique stripes; fringe black; hind wings yellowish-brown, palest at the base. Taken in Sutherlandshire, in July, by Messrs. Greville and Wilson.

DESCRIPTION OF PLATE LXXXII.

INSECTS.—Fig. 1. Spilonota nubiferana (the clouded white).
" Fig. 2. Spilonota cynosbatella (the black cloaked). 3. The Caterpillar.
" Fig. 4. Spilonota aquana (the brown cloaked). 5. The Caterpillar.
" Fig. 6. Spilonota trimaculana (the triple blotched).
" Fig. 7. Spilonota comitana (the cream short-cloaked).
" Fig. 8. Spilonota fœnella (the white foot).
" Fig. 9. Spilonota *Pflugiana* (the *Pflugian*).
" Fig. 10. Spilonota Stræmiana (the Stræmian).
" Fig. 11. Spilonota rusticana (the tawny blotch back).
" Fig. 12. Spilonota trigeminana (the three spotted).
" Fig. 13. Spilonota sticticana (the brown blotch back).

INSECTS.—Fig. 14. Spilonota costipunctana (the lesser blotch back).
" Fig. 15. Spilonota argyrana (the silver blotched back).
" Fig. 16. Spilonota quadrana (the Highland blotch back).
" Fig. 17. Spilonota tetragonana (the four-angled blotch back).
" Fig. 18. Spilonota nigricostana (the black-edged marble).
" Fig. 19. Spilonota ustulana (the scorched blunt wing).
" Fig. 20. Heusimene fimbriana (the brown bordered).

The whole of the insects in this plate are from the cabinet of Mr. Bentley, with the exception of S. Quadrana, Costipunctana, and Argyrana, from the figures in Wood. The caterpillars are from Hubner.

H. N. H.

SPILONOTA, STEPHENS. SPILONOTA, PARS, CURTIS.

These insects have the palpi very broadly compressed; the spiral tongue short; the antennæ filiform, pubescent beneath; the abdomen tufted in the males; the fore wings deflexed when at rest; rather linear, with the costa arched, and the apical margin obliquely truncate; the base and extremity, as well as the costa, being generally dark coloured, and the inner margin with a white blotch, whence the generic name. Mr. Curtis unites with these the genus Pœcilochroma of Stephens, which has also the inner margin of the fore wings marked with a pale blotch.

SPECIES 1.—SPILONOTA NUBIFERANA[f].—(Plate LXXXII., Fig. 1.)—Measures nearly ¾ of an inch in expanse; fore wings bone-white, slightly clouded with ashy, with a broad longitudinal bar of dull black running from the base to the middle of the wing, extending along the costa, and bearing in the middle of the wing two round black dots, one of which is in the middle of the inner margin of the bar, and the other at its apex towards the inner margin; hind wings brown. Taken in the middle of June in hedges, in Kent, etc., but very rare.

[f] SYNONYME.—*Tortrix nuberifana*, Haworth; Stephens; Wood, fig. 896.

SPECIES 2.—SPILONOTA CYNOSBATELLA[g].—(Plate LXXXII., Figs. 2, 3.)—Measures from 7½ to 10 lines in expanse; fore wings whitish, with a broad black fascia at the base, which extends along the costa as far as the middle of the wing, where it is dolabriform, and behind which are two or three grey or lead-coloured patches, forming an interrupted oblique bar; the apical margin itself more or less brown, in the middle of which are three or four minute, transverse, black dots; hind wings brown. Taken in gardens in July and August. The caterpillar is flesh coloured, with a black head (with pale spots) and neck, and a dusky dorsal line.

[g] SYNONYMES.—*Phalæna Tinea cynosbatella*, Linnæus; Haworth; Stephens; Wood, fig. 897.
Tortrix ocellana, Hubner.
Pyralis luxana, Fabricius (?).

SPECIES 3.—SPILONOTA AQUANA[h].—(Plate LXXXII., Figs. 4, 5.)—Measures rather more than $\frac{3}{4}$ of an inch in expanse; fore wings ashy-white, with dusky clouds and a broad trigonate fascia at the base; truncated at the extremity, blackish or brown, and a small tooth-like pitchy or black spot towards the inner margin; the apical margin, especially towards the tip of the wings, pitchy-red, or brownish; and the costa with numerous oblique pitchy lineolæ; hind wings brown. The caterpillar feeds on the rose; it is fleshy-brown, with black dots and slender lines. The moth appears in June, in gardens and woods.

[h] SYNONYME.—*Tortrix aquana*, Hübner; Haworth; Stephens; Wood, fig. 898.

SPECIES 4.—SPILONOTA TRIMACULANA[i].—(Plate LXXXII., Fig. 6.)—Measures $\frac{3}{4}$ of an inch in expanse; fore wings brown, slightly clouded with black, especially at the base, with two large patches on the inner margin, and a third minute one forming a triangle with them towards the costa, all clouded with ashy; the costa obliquely lineolated; hind wings brown, not shining. Taken at the beginning of July, in hedges and woods.

[i] SYNONYME.—*Tortrix trimaculana*, Haworth; Stephens; Wood, fig. 899.

SPECIES 5.—SPILONOTA COMITANA[j].—(Plate LXXXII., Fig. 7.)—Measures from 6 to $7\frac{1}{2}$ lines in expanse; fore wings variable in the prevalent tint, being whitish, or pale buff, or ashy, and marked with numerous slender dusky or ashy transverse striolæ, and with a broad basal fascia and a triangular patch towards the anal angle of brown, and a leaden patch near the apical triangle, in which are several minute transverse black dots; hind wings brownish or blackish. In some of the varieties there is an abbreviated fascia in the middle of the costa. Taken about the middle of June, in hedges and woods, and very common. The caterpillar feeds on the hornbeam.

[j] SYNONYME.—*Tortrix comitana*, Hübner; Haworth; Stephens; Wood, fig. 900.

SPECIES 6.—SPILONOTA FŒNELLA[k].—(Plate LXXXII., Fig. 8.)—Measures from 9 to 13 lines in expanse; fore wings chestnut-brown, with the apical portion ashy, with a broad hook-like white or buff fascia in the middle of the wing, extending to the inner margin; hind wings brown. Very rare. Taken in August at Wisbeach, in Epping Forest, and in Kent and Norfolk.

[k] SYNONYMES.—*Phalæna Tinea fœnella*, Linnæus; Haworth; Stephens; Wood, fig. 901.
Pyralis Scopoleana, Wien. Verz.; Fabricius.
Phalæna Tortrix interrogationana, Donovan, 2, pl. 65, fig. 1.
Tortrix tibialana, Hübner.

SPECIES 7.—SPILONOTA PFLUGIANA[l].—(Plate LXXXII., Fig. 9.)—Measures 10 or 11 lines in expanse; fore wings brown, and slightly clouded with ashy and black; the costa with small, geminated, buff lineolæ beyond the middle; the apex itself with a round, chestnut-coloured spot; about the middle of the inner margin arises a broad whitish fascia which runs half-way across the wing, and is but slightly nebulose; and another nearly similar occurs at the anal angle, separated from the former by a brownish irregular bar; hind wings brown and shining. Found in woods, in June.

[l] SYNONYME.—*Pyralis Pflugiana*, Fabricius; Haworth; Stephens; Wood, fig. 902.

SPECIES 8.—SPILONOTA STRÆMIANA[m].—(Plate LXXXII., Fig. 10.)—Measures $\frac{2}{3}$ of an inch in expanse; closely allied to the preceding species, but smaller, with the fore wings more chestnut or reddish, and clouded, with an abbreviated, broad, buff, or ochraceous blotch towards the middle of the inner margin, and another similar to it at the anal angle, separated from each other by a brown space; hind wings brown and shining. Taken in June and July, and a widely-dispersed and not uncommon insect.

[m] SYNONYMES.—*Pyralis Stræmiana*, Fabricius; Haworth; Stephens; Wood, fig. 903.
Tortrix similana, Hübner.
Phalæna Tortrix bimaculana, Donovan, 13, pl. 469.

SPECIES 9.—SPILONOTA RUSTICANA[n].—(Plate LXXXII., Fig. 11.)—Measures 8 or 9 lines in expanse; fore wings ashy-fulvous, and clouded with dusky lines; the costa with several minute, oblique, black lines, edged with white; the middle of the inner margin with a square white patch, and the apical margin with three or four minute black dots placed transversely; hind wings brown with pale fringe. Taken in June and August in fields and hedges, in Dorsetshire, and near London.

[n] SYNONYME.—*Pyralis rusticana*, Fabricius; Haworth; Stephens; Wood, fig. 904.

SPECIES 10.—SPILONOTA TRIGEMINANA[o].—(Plate LXXXII., Fig. 12.)—Measures 10 lines in expanse; fore wings rich brown, thickly marked with transverse black lineolæ; a pale luteous patch at the base; irrorated with dusky scales, a somewhat square, but rather irregular whitish patch at the middle of the inner margin; the apical portion of the wing mottled with luteous and silvery scales; and the costa beyond the middle with small, whitish, oblique lineolæ arranged in pairs; hind wings deep brown. Taken at Ripley, in July, but very rare.

[o] SYNONYME.—*Spilonota trigeminana*, Stephens, Illustr. H., 4. pl. 37, fig. 8.

SPECIES 11.—SPILONOTA STICTICANA[p].—(Plate LXXXII., Fig. 13.)—Measures from 7 to 10 lines in expanse; fore wings brown, and clouded with darker shades; the middle of the inner margin with a large, squarish, white blotch, in which is a dusky dot or two upon the margin itself; the anal angle with an ashy patch, sometimes obsolete, in which are four or five small, transverse, black dots; the costa beyond the middle ashy-brown, with whitish oblique lineolæ, arranged in pairs, sometimes almost obsolete. Taken in July and August, in hedges and woods.

[p] SYNONYMES.—*Pyralis sticticana*, Fabricius; Haworth; Stephens; Wood, fig. 906.
Tortrix profundana, Hübner.

SPECIES 12.—SPILONOTA COSTIPUNCTANA[q].—(Plate LXXXII., Fig. 14.)—Measures rather more than ½ an inch in expanse; fore wings clouded with brown and ashy; the costa beyond the middle marked with numerous black and white transverse lineolæ, which are not arranged in pairs; the middle of the inner margin with a white square spot, and, adjoining to this, is an oblique ashy bar which extends to the anal angle. Taken in June and July; but rare, and widely dispersed.

[q] SYNONYME.—*Tortrix costipunctana*, Haworth; Stephens; Wood, fig. 907.

SPECIES 13.—SPILONOTA ARGYRANA[r].—(Plate LXXXII., Fig. 15.)—Measures 9½ lines in expanse; "fore wings black, rather thickly streaked with obscure, waved, silvery lines, a distinct broad band of the same in the middle, palest on the inner margin, where it forms a narrow oblong patch; behind this, near the apex, is an oblique, irregular, silvery-ashy band, and some clouds of the same hue on the hinder apical margin; towards the tip of the costa are four pairs of short, silvery, white lines placed obliquely; cilia fuscous; posterior wings dark brown."—Stephens, loc. cit. Mr. Stephens's specimens were taken in August, in the Highlands of Scotland.

[r] SYNONYME.—*Spilonota argyrana*, Stephens, Illustr.; Wood, fig. 908.

SPECIES 14.—SPILONOTA QUADRANA[s].—(Plate LXXXII., Fig. 16.)—Measures 10 lines in expanse; fore wings "black, with fulvous clouds most distinct towards the apex, with two pair of obsolete ochraceous lines towards the tip of the costa; a quadrate ochraceous spot in the middle of the inner margin; towards the apex of the hinder (apical) margin is a curved row composed of about seven black dots; cilia mixed black and fulvous; posterior wings black, with ochraceous cilia."—Stephens. Mr. Stephens's specimen was taken in Scotland, in July.

[s] SYNONYME.—*Spilonota quadrana*, Stephens, Illustr.; Wood, fig. 909.

SPECIES 15.—SPILONOTA TETRAGONANA[t].—(Plate LXXXII., Fig. 17.)—Measures ½ an inch in expanse; fore wings dark blackish-brown, with black clouds, towards the extremity mottled with lead colour; the costa towards the tip with oblique white lines, and a squarish white patch in the middle of the inner margin. Taken in woods, in July, but not common.

[t] SYNONYME.—*Spilonota tetragonana*, Stephens; Wood, fig. 910.

SPECIES 16.—SPILONOTA NIGRICOSTANA[u].—(Plate LXXXII., Fig. 18.)—Measures ½ an inch in expanse; fore wings obtuse, deep smoky-black, and clouded, with a large, obtusely semilunate, ashy-white patch in the middle of the inner margin; fringe black; hind wings black, with brown fringe. Taken upon elms, in June, but rare.

[u] SYNONYME.—*Tortrix nigricostana*, Haworth; Stephens; Wood, fig. 911.

SPECIES 17.—SPILONOTA USTULANA[v].—(Plate LXXXII., Fig. 19.)—Measures nearly ½ an inch in expanse; fore wings obtuse, obscure, smoky-black, with the base broadly brownish-black, with a large, straight, central, obscure fascia, and the apical margin brownish-black; the costa has two obscure orange dots; between the middle fascia and the margin of the wing is a squarish ashy spot towards the inner margin, and another much more obscure near the anal angle; hind wings black. Taken in Norfolk, Surrey, etc.

[v] SYNONYME.—*Tortrix ustulana*, Haworth; Stephens; Wood, fig. 912.

HEUSIMENE, STEPHENS.

Like the species of the last genus, the present has the inner margin of the fore wings marked with a pale blotch in the middle; but they are longer and narrower, and somewhat rounded along the apical margin, and the hind wings are pale, with a broad dark border; the palpi are short, with the terminal joint not distinct; the antennæ are simple in both sexes.

SPECIES 1.—HEUSIMENE FIMBRIANA[w].—(Plate LXXXII., Fig. 20.)—Measures 7 lines in expanse; fore wings brown clouded with ashy, the inner margin having a semilunate ashy spot in the middle, in which is a brownish line; the costa with numerous obscure buff, oblique lineolæ; the hind wings are whitish-buff, with a broad dusky border. The ashy lunule of the fore wings is sometimes evanescent. Taken in the neighbourhood of oaks, in March, but very uncommon. Mr. Stephens took them on the wing in the afternoon; Chat Moss, Mr. Edleston.

[w] SYNONYME.—*Tortrix fimbriana*, Haworth; Stephens; Wood, fig. 913.

DESCRIPTION OF PLATE LXXXIII.

INSECTS.—Fig. 1. Pseudotomia obscurana (the obscure blotch back).
„ Fig. 2. Pseudotomia fraternana (the ashy silver barred).
„ Fig. 3. Pseudotomia nigro-punctana (the black dotted).
„ Fig. 4. Pseudotomia atromargana (the black bordered).
„ Fig. 5. Pseudotomia strobilella (the light silver striped).
„ Fig. 6. Pseudotomia sequana (the silver blotch back).
„ Fig. 7. Pseudotomia Petiverella (the Petiverian).
„ Fig. 8. Pseudotomia Lunulana (the crescent).
„ Fig. 9. Pseudotomia simpliciana (the plain silver fringed).
„ Fig. 10. Pseudotomia Jacquiniana (the Jacquinian).
„ Fig. 11. Pseudotomia strigana (the plain gold fringed).
„ Fig. 12. Pseudotomia atropurpurana (the purple black).
„ Fig. 13. Pseudotomia nigricana (the black striped edge).
„ Fig. 14. Pseudotomia obscurana [obsoletana] (the dingy).
„ Fig. 15. Pseudotomia proximana (the pale brown striped edge).

INSECTS.—Fig. 16. Pseudotomia puncticostana (the sector spotted).
„ Fig. 17. Pseudotomia populana (the pygmy Y).
„ Fig. 18. Pseudotomia Ephippana (the three angled blotch back).
„ Fig. 19. Pseudotomia Trauniana (the Traunian).
„ Fig. 20. Pseudotomia notata (the black and white).
„ Fig. 21. Pseudotomia Compositella (the triple striped blotch back).
„ Fig. 22. Pseudotomia Gundiana (the Gundian).
„ Fig. 24. Pseudotomia Lediana (the Ledean).
„ Fig. 25. Pseudotomia nitidana (the dark silver striped).
„ Fig. 26. Pseudotomia aurana (the double orange spot).
PLANT.—Fig. 27. Agrostemma gittago (common corn cockle),

The whole of the insects figured in this plate are from the cabinet of Mr. Bentley, except P. Lunulana. H. N. H.

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PSEUDOTOMIA, Stephens. ZEIRAPHERA, pars, Curtis.

The generic name of this numerous group has been given to it in allusion to the remarkable appearance which the apical margin of the fore wings exhibits near its extremity, of a pale line, having the appearance of a cleft or notch, in the fringe; the wings themselves are more elongated than in the Spilonotæ; although like them, they have a pale blotch in the middle of the inner margin; the palpi are porrected horizontally, clothed with a triangular mass of scales, of which the terminal joint of the palpi forms the extremity, being, however, scarcely visible.

Species 1.—Pseudotomia obscurana[x].—(Plate LXXXIII., Fig. 1.) Measures ½ an inch in expanse; fore wings dark brown, with darker clouds, and a square white spot in the middle of the inner margin divided into two parts by a dusky line; the costa towards the extremity, with a few short whitish streaks placed irregularly; along the apical margin is a slender black line; hind wings brown. Taken near London.

[x] Synonyme.—*Pseudotomia obscurana*, Stephens; Wood, fig. 914.

Species 1*.—Pseudotomia nigropunctana, Westwood.—(Plate LXXXIII., Fig. 3.)—Measures 5 lines in expanse; fore wings pale buff, delicately irrorated with grey scales, and marked with numerous minute and not very well-defined black dots; the base of the wing, on the inside, also darker; on the disk, beyond the middle, is a small silvery dot, and beyond it, parallel with the apical margin, is an abbreviated, curved, silvery streak; hind wings white in the middle, with the margins black; the anal and outer angles more broadly black. Allied to P. atromargana, but differs in the colours of the fore wings, and in the want of the pale patch, on the inner margin. A single specimen, taken on the bark of a birch-tree, in Dulwich Wood, many years ago, by Mr. Bentley, and communicated by him with the name above employed.

Species 2.—Pseudotomia fraternana[y].—(Plate LXXXIII., Fig. 2.)—Measures about ½ an inch in expanse; fore wings rather long and grey, with two nearly straight, rather obsolete, ashy-silvery fasciæ, the first before, and the second rather oblique, beyond the middle; the costa with some rather indistinct lines of the same colour; towards the anal angle is a small brown dot, and two or three darker ones towards the hinder margin; hind wings ashy, with a brown border. Taken in the spring, at Coombe Wood.

[y] Synonymes.—*Tortrix fraternana*, Haworth; Stephens; Wood, fig. 915.
Tortrix strobilana, Hübner, but not of Haworth.

Species 3.—Pseudotomia atromargana[z].—(Plate LXXXIII., Fig. 4.)—Measures about ½ an inch in expanse; fore wings ashy, clouded with brown, with a whitish patch in the middle of the inner margin, in which is an ashy striga, and two obsolete, very short, interrupted, silvery strigæ near the extremity of the wings, the costa with black and white streaks; hind wings brown, with the base paler, and the apex dusky; it varies in having the patch on the inner margin white; the silvery strigæ more or less obsolete, and the costa broadly margined with black, especially towards the anal angle. Taken in oak woods, in June.

[z] Synonyme.—*Tortrix atromargana*, Haworth; Stephens; Wood, fig. 916.

Species 4.—Pseudotomia strobilella[a].—(Plate LXXXIII., Fig. 5.)—Measures 4 or 5 lines in expanse; fore wings pale brown, with a broad, nearly obsolete, silvery streak near the base, another more distinct and angulated across the middle, and a third interrupted near the extremity of the wing, in the middle of which is a spot or transverse black mark, and occasionally two or three black minute dots near the anal angle; the middle of the inner margin also with a short, divided, whitish blotch, and the costa with several short silvery lineolæ; hind wings dusky. Taken at the end of May, in fir plantations.

[Mr. Longley states in the "Zoologist," that this of the preceding species are the sexes of one species, having taken them paired in May, in Hyde Park, their pupa-cases sticking out of the trunks of the oak-trees.]

[a] Synonymes.—*Phalæna Tinea strobilella*, Linnæus; Haworth; Stephens; Wood, fig. 917.
Tortrix argyrana, Hübner.

Species 5.—Pseudotomia sequana[b].—(Plate LXXXIII., Fig. 6.)—Measures about 5 lines in expanse; fore wings ashy, with angulated, yellowish, and silvery strigæ beyond the middle of the wing, and a large silvery blotch in the middle of the inner margin; the costa towards the extremity with several short white lineolæ, and with three very small black dots near the anal angle placed transversely; hind wings pitchy. Taken in woods, about the beginning of June.

[b] Synonyme.—*Tortrix sequana*, Hübner; Haworth; Stephens; Wood, fig. 918.

Species 6.—Pseudotomia petiverella[c].—(Plate LXXXIII., Fig. 7.)—Measures about ½ an inch in expanse; fore wings fulvous-brown, having a large semilunate, pale, golden-coloured blotch in the middle of the inner margin; the disk beyond the middle with various more or less obsolete, golden, leaden-coloured, and pale strigæ; the costa beyond the middle streaked with golden and leaden colour; the fringe leaden coloured and shiny; hind wings blackish. It varies in being rather smaller, with the pale mark in the inner margin, and the posterior costal strigæ more or less obliterated. Taken in woods, about the beginning of June.

[c] Synonyme.—*Phalæna Tinea Petiverella*, Linnæus; Haworth; Stephens; Wood, fig. 919.

Species 7.—Pseudotomia lunulana[d].—(Plate LXXXIII., Fig. 8.)—Measures 7 lines in expanse; fore wings brown, with a simple, silvery, semilunate spot in the middle of the inner margin, and numerous whitish lineolæ beyond the middle of the costa; the anal spot is silvery, with black streaks, and the hind wings dark brown. Taken in Hampshire, in Juue.

[d] Synonyme.—*Tortrix lunulana*, Wien. Verz.; Stephens, Illustr.; Wood, fig. 920.
Pseudotomia concinnana, Stephens, Catal.

Species 8.—Pseudotomia simpliciana[e].—(Plate LXXXIII., Fig. 9.)—Measures 7 lines in expanse; fore wings obtuse, pale brown, with abbreviated, short, pale lineolæ on the costa beyond the middle; in the middle of the inner margin is an obscure, yellowish, triangular patch, placed rather obliquely; and towards the anal angle is a patch composed of three very minute, black, transverse dots; hind wings brown; fringe of all the wings, in certain lights, silvery and glossy, the anterior ones especially, with the notch-like mark. Taken in June.

[e] Synonyme.—*Tortrix simpliciana*, Haworth; Stephens; Wood, fig. 921.

Species 8*.—Pseudotomia Artemisiæ.—(Bentley, in Zool., p. 774.)—"Expanse 7 to 7½ lines; fore wings deep fuscous at the base, beyond the middle greyish-brown, with a slight golden tinge; the costa with four oblique blackish dots; the inner margin with three small transverse black dots; upon the extreme margin is a slight notch, giving the apex a round appearance; in the middle of the inner margin is an obscure greyish patch; cilia cinereous, and glossy, with a slender dark line at the base; hind wings fuscous. Taken at Margate, in July and August, upon a species of Artemisia, by Mr. Bentley.

Species 9.—Pseudotomia jacquiniana[f].—(Plate LXXXIII., Fig. 10.)—Measures 7 lines in expanse; fore wings golden-fulvous, with a large semilunate patch of obscure golden colour in the middle of the inner margin; the costa beyond the middle streaked with oblique, slender, fulvous lineolæ; the apical margin with three very minute black dots placed transversely near the anal angle, as in the preceding species; hind wings pitchy-black. Variable; being sometimes smaller, with the fore wings fulvous-brown, with golden-ashy fringe, and the hind wings black. Taken in woods, in June.

[f] Synonyme.—*Pyralis Jacquiniana*, Fabricius; Haworth; Stephens; Wood, fig. 922.

Species 10.—Pseudotomia strigana[g].—(Plate LXXXIII., Fig. 11.)—Measures about ½ an inch in expanse; fore wings somewhat retuse, and narrower than in the allied species, fulvous with scarcely any clouding, and

with very short, ferruginous, yellowish, and dusky silvery, oblique lineolæ beyond the middle of the costa; with three very minute, black, transverse dots placed in the apical margin, near the anal angle; hind wings brownish; fringe, in certain positions, golden and shining. Varies in having the wings chestnut-brown, with the three minute dots and costal marks nearly obliterated. Taken in woods, in June.

[g] Synonyme.—*Pyralis strigana*, Fabricius; Haworth; Stephens; Wood, fig. 923.

Species 11.—Pseudotomia atropurpurana[h].—(Plate LXXXIII., Fig. 12.)—Measures nearly ½ an inch in expanse; fore wings glossy, blackish-purple without spots; fringe white, shining with silver in certain positions; hind wings brown or brownish, with a broad costal margin of white attenuated towards the extremity of the wings. Taken at Coombe Wood, in July.

[h] Synonyme.—*Tortrix atropurpurana*, Haworth; Stephens; Wood, fig. 924.

Species 12.—Pseudotomia nigricana[i].—(Plate LXXXIII., Fig. 13.)—Measures rather more than ½ an inch in expanse; all the wings pitchy-black, shiny; the fore ones with the costa black, with numerous oblique, whitish lineolæ, especially beyond the middle. In the middle of the apical margin are two or three contiguous black lineolæ encircled by a golden edge, visible in certain positions only; hind wings dusky; the fringe of all the wings pale and shining with silver in certain positions. Taken in woods and hedges, in June and August.

[i] Synonyme.—*Pyralis nigricana*, Fabricius; Haworth; Stephens; Wood, fig. 925.

Species 13.—Pseudotomia obsoleta, Westwood, in App. to first edit.—(Plate LXXXIII., Fig. 14.)—Measures 7 lines in expanse; fore wings greyish-brown, with a slight golden gloss beyond the middle; costa beyond the middle with four blackish triangular dots emitting oblique dusky lines; disk of the wing beyond the middle with several slender, almost indistinct dusky lines; apical margin with a black line, within which, in the centre, are three minute black dots; the middle of the inner margin with an obscure greyish patch, preceded by a darker brown space; fringe brown, with a silvery gloss; apical margin slightly emarginate near the tip; hind wings brown. Taken at Margate, in July, by Mr. Bentle, who has obligingly allowed us to describe and figure this and other novelties from his very valuable collection.

Synonyme.—*Pseudotomia obscurana*, Westwood, in text of first edition.

Species 14.—Pseudotomia proximana[j].—(Plate LXXXIII., Fig. 15.)—Measures ½ an inch in expanse; very similar to the last, scarcely differing except in colour; fore wings pale brown, shining in certain positions, with a golden gloss; the costa with oblique, white, and fulvescent lineolæ; hind wings rarker darker coloured. Taken in London and Devonshire.

[j] Synonyme.—*Tortrix proximana*, Haworth; Stephens; Wood, fig. 926.

Species 15.—Pseudotomia punctigostana[k].—(Plate LXXXIII., Fig. 16.)—Measures nearly ½ an inch in expanse; fore wings "purple, black, immaculate; the costa with short, white, elongate spots, most conspicuous in the middle; fringe with a lead-coloured gloss; posterior wings brown-black, with paler cilia." Taken by Mr. Stephens, at Ripley, in June, in grassy places, but rare.

Obs.—The four preceding species constitute a distinct group in the genus destitute of the patch on the inner margin of the fore wings.

[k] Synonyme.—*Pseudotomia punctigostana*, Stephens; Wood, fig. 927.

Species 16.—Pseudotomia populana[l].—(Plate LXXXIII., Fig. 17.)—Measures from ⅓ to ½ an inch in expanse; fore wings black; the costa of the fore wings spotted with golden, white, and black, and the middle of the inner margin with a white mark, somewhat resembling the Greek minuscule letter λ; sometimes the interior of the letter bears a white twig, thus resembling, when both the wings are folded upon the back, the Greek capital Φ in white scales; near the apical margin are some golden scales; hind wings black or dusky. Rare. Found in the autumn, in the neighbourhood of nettles.

[l] Synonyme.—*Pyralis populana*, Fabricius; Haworth; Stephens; Wood, fig. 928.

SPECIES 17.—PSEUDOTOMIA EPHIPPANA[m].—(Plate LXXXIII., Fig. 18.)—Measures nearly ½ an inch in expanse; fore wings black-brown, clouded with violet, with bluish silvery lines, and a triangular white blotch in the middle of the inner margin of the fore wings, in which is occasionally a minute white dot; near the anal angle is a metallic spot; hind wings pale. Taken in woods, in June.

[m] SYNONYMES.—*Tortrix ephippana*, Hübner (?); Stephens, Illustr.; Wood, fig. 929.
Pseudotomia trigonana, Stephens, Catal.

SPECIES 18.—PSEUDOTOMIA TRAUNIA[n].—(Plate LXXXIII., Fig. 19.)—Measures rather more than ½ an inch in expanse; fore wings brownish-black, glossed with leaden-coloured scales within the costal and apical margins; the costa with numerous oblique, pale yellowish, slender, abbreviated, oblique lineolæ; and the inner margin with a large, nearly semicircular, bright orange-yellow spot; hind wings dark brown, with paler fringe. Very rare. Hull, in Norfolk—formerly near Islington—in June. I have several specimens, taken by myself, many years since; most probably at Coombe Wood.

[n] SYNONYME.—*Pyralis Trauniana*, Fabricius; Hübner; Haworth; Stephens; Wood, fig. 930.

SPECIES 19.—PSEUDOTOMIA NOTATA, Westwood.—(Plate LXXXIII., Fig. 20.)—Measures about ½ an inch in expanse; all the wings of a very dark olive-brown; the fore ones with a very large cream-coloured patch in the middle of the inner margin, and the costa with two minute silvery dots before the middle, and about five towards the extremity; apical margin not notched; fringe glossy. Taken by Mr. Bentley, near Woolwich.

SPECIES 20.—PSEUDOTOMIA COMPOSITELLA[o].—(Plate LXXXIII., Fig. 21.)—Measures about ⅓ inch in expanse; fore wings black-brown, with the costa streaked with about eight pale yellow or silvery oblique lineolæ, especially beyond the middle of the wing; and a large silvery squarish blotch in the middle of the inner margin, bearing three slender, waved, black lines within; hind wings white, with a black border broadest towards the outer angle. Taken in woods, in June.

[o] SYNONYMES.—*Tinea compositella*, Fabricius; Stephens, Illustr., plate 37, fig. 2; Wood, fig. 931.
Pyralis composana, Fabricius; Haworth.

SPECIES 21.—PSEUDOTOMIA GUNDIANA[p].—(Plate LXXXIII., Fig. 22.)—Very closely allied to the last, from which it is, however, distinguished by its dark-coloured hind wings; fore wings pitchy-black, the costa having eight slender, silvery, white lineolæ in pairs; the inner margin with a similarly-marked and coloured pale patch; towards the apical margin is also a metallic patch; hind wings deep black. Taken in woods, in June.

[p] SYNONYME.—*Tortrix Gundiana*, Hübner; Haworth; Stephens; Wood, fig. 932.

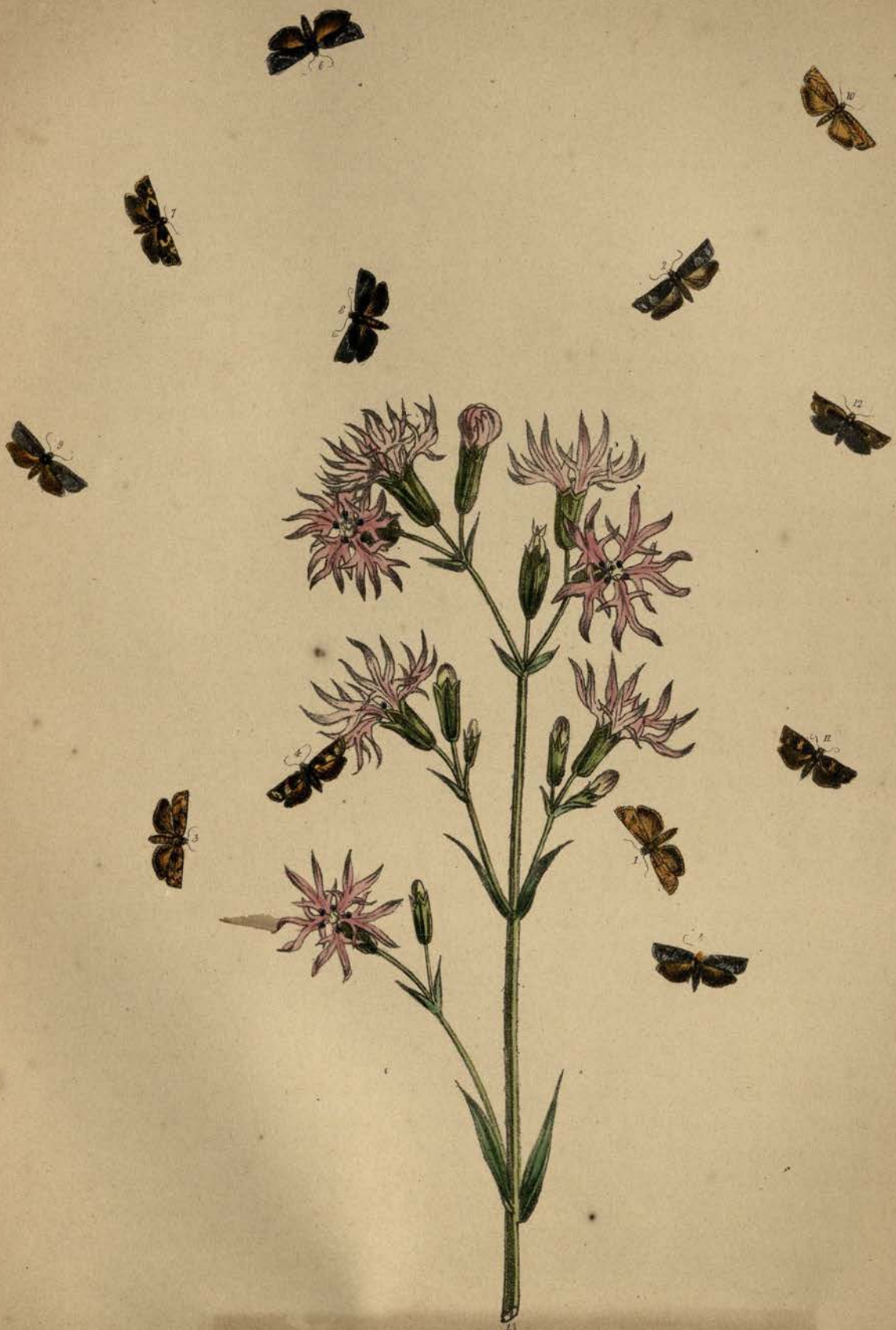
SPECIES 22.—PSEUDOTOMIA DORSANA[q].—Measures from ¼ to ⅓ inch in expanse. Very closely allied to P. compositella, but differs at once by the large patch on the inner margin of the fore wings bearing only a single slender dusky line; the costa with similar, pale, oblique lineolæ, and the hind wings whitish, with a dusky border. Taken in woods, in June.

[q] SYNONYME.—*Pyralis dorsana*, Fabricius; Haworth; Stephens; Wood, fig. 933.

SPECIES 23.—PSEUDOTOMIA LEDIANA[r].—(Plate LXXXIII., Fig. 24.)—Measures from ⅓ to nearly ½ an inch in expanse; fore wings very obtuse, dull brownish-black, with a purplish gloss as seen in certain positions, and with numerous darker clouds; the costa finely streaked with dark fulvous and brown, the inner margin sometimes paler in the middle; hind wings pitchy-black. This is a variable species in the strength and brightness of its markings. Taken in woods, in June.

[r] SYNONYME.—*Phalæna Tortrix Lediana*, Linnæus; Clark; Haworth; Stephens; Wood, fig. 934.

SPECIES 24.—PSEUDOTOMIA NITIDANA[s].—(Plate LXXXIII., Fig. 25.)—Measures ⅛ of an inch in expanse; wings black with a silvery-ashy fascia outwardly unangulated across the fore wings before the middle, bearing a slender dusky line along its centre; the costa beyond the middle with very short black and silvery



SPECIES 4.—STEGANOPTYCHA TRIQUETRANA[y].—(Plate LXXXIV., Fig. 4.)—Measures abont 7 lines in expanse; fore wings grey, the base with a trigonate, ashy-brown bar at the base, which is, however, often obscure; the disk of the wing with a brown spot near the extremity towards the inner margin, the intermediate space is pale, terminated by a brown cloud; hind wings brown. Taken at the end of June, but not common.

[y] SYNONYME.—*Tortrix triquetrana*, Haworth; Stephens; Wood, fig. 940.

SPECIES 5.—STEGANOPTYCHA PAVONANA[z].—(Plate LXXXIV., Fig. 6.)—Measures 7 lines in expanse; fore wings ashy, delicately clouded with black, the costa streaked with white and black lineolæ, the extremity with an ustulated round spot, the inner margin with an ovate red spot, edged with black; hind wings brown, with a darker border. Taken in woods, in August, but rare.

[z] SYNONYMES.—*Phalæna pavonana*, Donovan, 2, pl. 58, fig. 3, pl. 59, fig. 1; Stephens, Illustr.; Wood, fig. 941.
Tortrix rubiana, Villers (?); Haworth.

SPECIES 6.—STEGANOPTYCHA BŒBERANA[a].—(Plate LXXXIV., Fig. 5.)—Measures about 7 lines in expanse; fore wings ashy, with fine brown and dusky clouds, and with a broad, lanceolated, black streak, common to both wings, extending from the base to beyond the middle, and a little tinted with reddish on the middle of the hinder margin; hind wings brown; varies in the depth of its colours, and regarded by Mr. Haworth as a probable variety of the preceding species. Taken near London, and in the New Forest, in August.

[a] SYNONYMES.—*Pyralis Bœberana*, Fabricius; Haworth; Stephens; Wood, fig. 942.
Phalæna Tinea misella, Linnæus.

SPECIES 7.—STEGANOPTYCHA CUSPIDANA[b].—(Plate LXXXIV., Fig. 7.)—Measures ½ an inch in expanse; fore wings with the middle occupied by a broad, pale, red space, the base with a black fascia produced behind into an acute point. The apical margin also black, with ashy shades; the costa also faintly strigose, and the extremity with an ustulated brown spot; hind wings dusky, especially on the margin. Regarded by Mr. Haworth as a probable variety of the last species, from which, however, it differs in wanting the black lanceolated streak. Taken in woods, in August.

[b] SYNONYME.—*Tortrix cuspidana*, Haworth; Stephens; Wood, fig. 943.

SPECIES 8.—STEGANOPTYCHA RHOMBIFASCIANA[c].—(Plate LXXXIV., Fig. 8.)—Measures 7 lines in expanse; fore wings ashy, clouded with black beyond the middle, and with a trapeziform black fascia at the base of the wings; the middle of the inner margin with a more or less distinct red patch, as in S. pavonana; hind wings brown. Taken in woods, about the end of July, but rare.

[c] SYNONYME.—*Tortrix rhombifasciana*, Haworth; Stephens; Wood, fig. 944.

SPECIES 9.—STEGANOPTYCHA STICTANA[d].—(Plate LXXXIV., Fig. 10.)—Measures about ½ an inch in expanse; fore wings reddish, clouded with small black dots or clouds, the base and apex similarly coloured, and without the markings of the allied species; hind wings brown. Taken in August, but rare.

[d] SYNONYME.—*Tortrix stictana*, Haworth; Stephens; Wood, fig. 945.

SPECIES 10.—STEGANOPTYCHA CINEREANA[e].—(Plate LXXXIV., Fig. 9.)—Measures 7 lines in expanse; fore wings ashy, marbled with brown; the costa ashy-brown, very much marked with oblique striolæ, and the apex itself with a round brown spot; near the extremity of the wings is an obsolete, somewhat silvery, blind ocellus, having a brown iris; hind wings brown. Taken on the trunks of trees covered with lichens, in August, but rare.

[e] SYNONYME.—*Tortrix cinereana*, Haworth; Stephens; Wood, fig. 946.

SPECIES 11.—STEGANOPTYCHA RETUSANA[f].—(Plate LXXXIV., Fig. 11.)—Measures 6 or 7 lines in expanse; fore wings retuse, ashy-red, with a whitish-ashy spot in the middle of the inner margin, the base with a dark fascia on the same margin; the costa obliquely streaked with white, the anal angle ashy, with some black transverse lines, and a round red spot at the apical angle; hind wings brown. Very variable, the fore wings having the ground-colour varying from ashy-red to pale testaceous, sometimes almost uniform, but sometimes with the markings more contrasted and distinct. The costal strigæ more or less distinct, the marking on the middle of the inner margin varying in width and size, etc. Taken in woody districts, and common in June,

[f] SYNONYME.—*Tortrix retusana*, Haworth; Stephens; Wood, fig. 947.

SPECIES 12.—STEGANOPTYCHA SUBUNCANA[g].—(Plate LXXXIV., Fig. 12.)—Measures about ½ an inch in expanse; fore wings pale reddish, the costa with white oblique lineolæ, and the tip (which is slightly caudate and recurved) with a brown dot near the base; on the inner margin is a darker red-brown patch, terminated by a transverse white line, shaded off towards the costa; anal angle with an ashy patch; hind wings dark brownish. Taken in woods, in June, but rather uncommon.

[g] SYNONYME.—*Tortrix subuncana*, Haworth; Stephens; Wood, fig. 948.

DESCRIPTION OF PLATE LXXXV.

INSECTS.—Fig. 1. Anchylopera obtusana (the blunt-winged blotch back).
„ Fig. 2. Anchylopera uncana (the hook-tipped blotch back).
„ Fig. 3. Anchylopera Lundiana (the Lundian).
„ Fig. 4. Anchylopera Lyellana (Lyell's).
„ Fig. 5. Anchylopera fractifasciana (the broken barred).
„ Fig. 6. Anchylopera siculana (the hook-tipped streak). 7. Caterpillar. 8. Caterpillar in another stage.
„ Fig. 9. Anchylopera diminutana (the festoon Tortrix).
„ Fig. 10. Anchylopera funulana (the dark festoon).
„ Fig. 11. Anchylopera uncana (the bridge).
„ Fig. 12. Anchylopera ustomaculana (the Loch Ranoch).
„ Fig. 13. Anchylopera biarcuana (the double arched).
„ Fig. 14. Anchylopera derasana (the naked winged).
„ Fig. 15. Anchylopera cuspidana (the sharp angled).
„ Fig. 16. Philalcea ramella (the hooked marble). 17. The Caterpillar.

INSECTS.—Fig. 18. Philalcea nigromaculana (the beautiful marble).
„ Fig. 19. Philalcea nævana (the spotted short cloak).
„ Fig. 20. Philalcea sociana (the white short cloak).
„ Fig. 21. Philalcea amœnana (the marbled short cloak).
„ Fig. 22. Philalcea Paykulliana (the Paykullian).
„ Fig. 23. Philalcea fimbriana (the double crescent). 24. A variety.
„ Fig. 25. Philalcea bilunana (the hoary double crescent).
„ Fig. 26. Philalcea subocellana (the retuse marble).
„ Fig. 27. Philalcea asseclana (the obtuse marble).
„ Fig. 28. Philalcea Mitterbacheriana. 29, 30. Varieties (the Mitterbachian).

PLANT.—Fig. 31. Rhamnus Catharticus (Buckthorn).

All the insects figured on this plate are from the collection of Mr. Bentley, except Anchylopera Lyellana, which is from Mr. Curtis's fig., from a specimen in his cabinet.

ANCHYLOPERA, STEPHENS, CURTIS.

These insects are chiefly distinguished by their fore wings, of which the tips are slightly falcated (whence the generic name), and the disk with pale undulated or curved longitudinal lines sometimes dividing the wing into two differently coloured portions; the inner margin is also marked with a large, subtrigonate, or semiovate spot. The palpi are nearly horizontally porrected, very squamose, but with the apical joint not concealed; the crown tufted. The caterpillars have six pectoral, eight ventral, and two anal feet.

SPECIES 1.—ANCHYLOPERA OBTUSANA[h].—(Plate LXXXV., Fig. 1.)—Measures nearly ½ an inch in expanse; fore wings obtuse, reddish, with an irregular, silvery-ashy, fulvous fascia, faintly margined with white, extending from the base of the costa to the anal angle, and slightly branched; the remainder of the costa very strigose, with white and red lineolæ; the apex with a red spot edged with white; hind wings brown. Taken in woods, near London, about the beginning of June, but rare.

[h] SYNONYME.—*Tortrix obtusana*, Haworth; Stephens; Wood, fig. 949.

SPECIES 2.—ANCHYLOPERA CONSOBRINA[i].—Very similar to the preceding species, "and may be only the female; the superior wings are narrower, and the sivery line across the middle is more arcuated and oblique."—Curtis, l. c., by whom a specimen was taken in Coombe Wood.

[i] SYNONYME.—*Anchylopera consobrina*, Curtis, Brit. Ent., 376.

SPECIES 3.—ANCHYLOPERA UNCULANA[j].—(Plate LXXXV., Fig. 2.)—Measures about 7 lines in expanse; fore wings somewhat caudate, ashy, with a large, ustulated, red patch common to both wings near the base, and another near the tip of the costa of the same colour, but paler and triangular, the intervening space ashy with a slender white edging; the costa has some very short, obscure, silvery lineolæ, two more distinct converging towards the apical margin, and partly enclosing an angular red space at the tip; hind wings dark brown. Taken in woods near London, in June.

[j] SYNONYME.—*Tortrix unculana*, Haworth; Stephens; Wood, fig. 950.

SPECIES 4.—ANCHYLOPERA LUNDIANA[k].—(Plate LXXXV., Fig. 3.)—Measures 7 lines in expanse; fore wings caudated, pale ochreous, which colour extends obliquely towards the anal angle, fulvous towards the extremity, with a golden-coloured, very oblique striga, and a large, ustulated, chestnut patch at the base on the inner margin, common to both the wings; the costa beyond the middle is marked with some very short, oblique, silvery lineolæ; the apical margin is pale as well as the fringe; the hind wings are brown. Taken in woods about the end of May.

[k] SYNONYMES.—*Pyralis Lundiana*, Fabricius; Haworth; Donovan, pl. xl., 374, fig. 1; Stephens; Wood, fig. 951.
Tortrix Corylana, Hübner.

SPECIES 5.—ANCHYLOPERA LYELLANA[l].—(Plate LXXXV., Fig. 4.)—Measures 6½ lines in expanse; satiny, pale cinereous; collar and apex of the abdomen ochreous; superior wings slightly variegated with pale ochre; on the costa are an oblique macula at the middle, three dots beyond, and a spot at the apex, dull ferruginous; on the interior margin is the usual large patch of a deep brown and subtrigonate; nearer the anal angle a brown crescent (bearing five black lines and dots), which leaves a grey oval macula at the anal angle.—Curtis. Taken at Kinnordy, in Scotland.

[l] SYNONYME.—*Anchylopera Lyellana*, Curtis, Brit. Ent., fol. 376; Stephens; Wood, fig. 959.

SPECIES 6.—ANCHYLOPERA FRACTIFASCIANA[m].—(Plate LXXXV., Fig. 5.)—Measures about 7 lines in expanse: fore wings pale brown, mottled with grey and strigose, with a dark broad fascia towards the base of the wings, slightly incurved, and a second, often very much interrupted or broken, and oblique across the middle, of reddish or fulvous-brown; the costa prettily spotted with brown and buff-white, having a dot near the apex twice the size of the others; within the apical margin is a row of brown dots not extending either to the apical or anal angles, and occasionally obliterated; the hind wings brownish. Taken near Brockenhurst, in the New Forest, near London, and also near Ambleside.

[m] SYNONYME.—*Tortrix fractifasciana*, Haworth; Stephens, Illustr., H. 4, pl. 34, fig. 3; Wood, fig. 953.

SPECIES 7.—ANCHYLOPERA SICULANA[n].—(Plate LXXXV., Figs. 6, 7, 8.)—Measures from 6 to 7½ lines in expanse; fore wings very acutely produced at the tip and falcate, of a reddish-buff colour, with a whitish streak extending from the base nearly to the apex; another central, interrupted brown or black extending to the apex, bordering on the preceding; the costa from the middle to the apex is marked with numerous very oblique black lineolæ, bordered with whitish-buff; the hind wings pale brown. Taken at Wimbledon Common, Coombe Wood, etc., in May.

[n] SYNONYME.—*Tortrix siculana*, Haworth; Hübner; Stephens; Wood, fig. 934.

SPECIES 8.—ANCHYLOPERA DIMINUTANA[o].—(Plate LXXXV., Fig 9.)—Measures 6 or 7 lines in expanse; fore wings rather acute at the tip, reddish, with broad ashy waved vitta extending within the whole of the inner margin, and separated from the red fore part of the wing by a distinct whitish streak, which follows its undulations, and runs to the apex of the wing; hind wings ashy-brown. Taken in the woods round London, in June.

[o] SYNONYME.—*Tortrix diminutana*, Haworth; Stephens; Wood, fig. 955.

SPECIES 9.—ANCHYLOPERA FUNULANA[p].—(Plate LXXXV., Fig. 10.)—Measures 7 lines in expanse; fore wings slightly caudate, brownish-red, with a broad, much-waved, longitudinal streak, extending nearly from the base to the apex, and dilated into a patch on the inner margin before the middle; hind wings brown. Taken at Coombe Wood, in June.

[p] SYNONYME.—*Anchylopera funulana*, Stephens: Wood, fig. 956.

SPECIES 10.—ANCHYLOPERA UNCANA[q].—(Plate LXXXV., Fig. 11.)—Measures 7 or 8 lines in expanse; fore wings brunneous, with the costa beyond the middle streaked with white; the apex acutely produced and slightly recurved, in the middle of the inner margin is a large semicircular spot or arch of an ashy hue, and a second smaller confluent one towards the anal angle, within which latter are some dusky scales; hind wings pale brown. Taken in the woods round London, in June.

[q] SYNONYMES.—*Tortrix uncana*, Hübner; Haworth; Stephens; Wood, fig. 957.
Phalæna Tortrix geminana, Donovan, xi., pl. 370, fig. 1.

SPECIES 11.—ANCHYLOPERA USTOMACULANA[r].—(Plate LXXXV., Fig. 12.)—Measures 7 lines in expanse; fore wings "deep brown, the base glossy, cinereous, with six or seven cleft marks on the costa of the same colour, the third continued to the anal margin, bearing an oblique brown fascia across the centre dilated at the middle, the margins sinuated; a large subtrigonate mark on the internal margin silvery-grey, some smaller, irregular markings of a similar colour towards the posterior margin, and a black spot at the apex." Taken by Mr. Curtis in the middle of June, in the Black Wood of Loch Rannoch.

[r] SYNONYME.—*Anchylopera ustomaculana*, Curtis, Brit. Ent., pl. 376; Stephens; Wood, fig. 958.

SPECIES 12.—ANCHYLOPERA BIARCUANA[s].—(Plate LXXXV., Fig 13.)—Measures 8 lines in expanse; fore wings dull ferruginous along the middle, with the costa rather paler, the inner part of the wing whitish-ash, which colour is separated from the dark front part by a waved whitish line, which forms a curve opposite the middle of the inner margin, and a larger arch opposite the anal angle; the costa beyond the middle bears some very oblique and slender black lineolæ, and the extreme apex is dark coloured, the centre of the wing also bears one or two darker longitudinal lines; the hind wings are ashy, with paler fringe. Taken at Coombe Wood, in May, by Mr. Chant, and on Wimbledon Common, by Mr. Lambert.

[s] SYNONYMES.—*Anchylopera biarcuana*, Stephens, Catal.; Curtis.
Phoxopteris cuspidana, Treitschke (?); Stephens, Illustr.; Wood, fig. 959.

SPECIES 13.—ANCHYLOPERA DERASANA[t].—(Plate LXXXV., Fig. 14.)—Measures 6 lines in expanse; fore wings pale bnff, with a large, somewhat heart-shaped, liver-coloured patch at the base on the inner margin, edged with a white line, followed by an angulated oblique reddish-brown striga, bearing several slight black dashes in the middle, extending from the middle of the costa but not reaching the inner margin; the costa beyond the middle with slender dark oblique lines placed in the contrary direction, and the apical margin also darker coloured. Taken at Spitchweek, Devonshire, by Mr. Chant, in June.

[t] SYNONYME.—*Tortrix derasana*, Hübner; Stephens; Wood, fig. 960.

SPECIES 14.—ANCHILOPERA CUSPIDANA[u].—(Plate LXXXV., Fig. 15.)—Measures 5½ lines in expanse; fore wings with the tips slightly hooked, brown, with a large dark brown patch terminating obliquely near the middle of the inner margin, but not extending to the costa, which is greyish, with minute black dots; at the middle of the costa arises a long, slender, very oblique brown dash, which extends to the apical margin below the apex, enclosing an elongated brown patch, bearing about eight whitish streaks, of variable length, running obliquely, but those near the tip being semicircular; behind this space the wing is silvery-grey, having a semicircular brown patch in the middle of the disk, and a smaller brown dot at the anal angle, the fringe at the tip bears a brown patch, followed by two white streaks; hind wings pale greyish-brown. Taken at Riddlesdown, near Croydon, about the beginning of August, by J. W. Douglas, Esq.

[u] SYNONYME.—*Cochylis cuspidana*, Treitschke; Douglas, in Entomologist, p. 385 (but not of Stephens).

PHILALCEA, STEPHENS, CURTIS. ANTICLEA, STEPHENS (OLIM).

The insects have the palpi porrected obliquely, and bent upwards, with the scales forming an elevated mass almost concealing the tip of the apical point; the spiral tongue is very short, the antennæ setaceous, the forehead with a tuft of scales; the fore wings elongate, with the tip sometimes falcated, the disk pale, with black or other dark clouds or fasciæ. The caterpillars with six pectoral, eight abdominal, and two anal feet.

SPECIES 1.—PHILALCEA RAMELLA[v].—(Plate LXXXV., Figs. 16, 17.)—Measures about ⅔ of an inch in expanse; fore wings cream-white; the costa with slender oblique, black, lineolæ through its whole length, the apical angle produced and slightly hooked, and occupied by a large fulvous-chestnut patch marked with black and white lineolæ, the inner margin also bears a number of small dark patches, one in the middle larger than the rest, and the anal angle is broadly occupied by a large patch of silvery, leaden-coloured, and black scales, with a white external margin; hind wings greyish-brown. Taken in hedges, in June. Darenth.

[v] SYNONYMES.—*Phalæna Tortrix ramella*, Linnæus; Curtis; Godart, pl. 253, fig. 2.
Pyralis lætana, Fabricius.
Tortrix harpana, Hübner; Haworth; Stephens, Ill.; Haust., 4, pl. 37, fig. 1; Wood, fig. 961.

SPECIES 2.—PHILALCEA NIGROMACULANA[w].—(Plate LXXXV., Fig. 18.)—Measures ½ an inch in expanse; fore wings snowy-white with the tips ashy-brown, clouded and spotted with black; the costa with several black minute dots, and with a small spot before and another behind the middle; the inner margin with two large black spots, the first before the middle, angulated and duplicated, and the second larger near to the anal angle, and acutely conical, adjoining which is a patch marked with ashy and white waved lines; hind wings darkish brown. Very widely dispersed, occurring in Ireland and Scotland, as well as in various parts of England, about the end of July, but very rare.

[w] SYNONYME.—*Tortrix nigromaculana*, Haworth; Stephens; Wood, fig. 962.

SPECIES 3.—PHILALCEA ALBANA[x].—Measures 6½ lines in expanse; fore wings snowy-white, slightly clouded with ashy, the tip ashy-brown, an ashy spot before the middle of the wing formed of three approximating black strigæ, and another black conical spot near the anal angle; hind wings whitish, with the tips dusky. Taken in Yorkshire and Kent, about the end of June. It appears to be only a pale variety of the preceding.

[x] SYNONYME.—*Tortrix albana*, Haworth; Stephens; Wood, fig. 963.

SPECIES 4.—PHILALCEA NÆVANA[y].—(Plate LXXXV., Fig. 19.)—Measures from 5 to 6½ lines in expanse; fore wings, with the base, broadly livid black, occasionally streaked with white; nearly across the middle of the wing is a broad, white, oblique fascia, dilated behind, and bearing a minute black dot on the inner margin; the

costa beyond the middle with minute, faint, whitish streaks placed in pairs, the anal angle with a large whitish patch emitting a short branch towards the disk of the wing; tip of the wing with a round brownish spot and a white dash. Taken in the Kentish woods, in June.

[y] SYNONYME.—*Tortrix nævana*, Hübner; Stephens; Wood, fig. 964.

SPECIES 5.—PHILALCEA SOCIANA[z].—(Plate LXXXV., Fig. 20.)—Measures rather more than ½ an inch in expanse; fore wings black or blackish from the base nearly to the middle, followed by a snowy-white fascia, then another often abbreviated dark fascia extending from the middle of the costa, the apical half of the wing ashy-white, the margin itself darker; the apical angle with a brunneous patch; hind wings brown. Taken in woods, etc., in June.

[z] SYNONYME.—*Tortrix sociana*, Haworth; Stephens; Wood, fig. 965.

SPECIES 6.—PHILALCEA AMŒNANA[a].—(Plate LXXXV., Fig. 21.)—Measures about ½ an inch in expanse; very variable; fore wings varied with white, blackish-brown, and ashy, the base dark, the middle of the costa with a reddish dash placed upon a small, flexuous, ashy, transverse mark, beyond which is a dark longitudinal dot nearly in the middle of the wing, the apical margin also bears a conspicuous brunneous round spot, imperfectly edged with black, and on the disk near the tip is a small black dot. In some specimens the wings are of a more ashy colour without the white, and sometimes they are entirely dark brown with the markings black. Taken in August, at Darenth Wood and elsewhere.

[a] SYNONYME.—*Tortrix amœnana*, Hübner (♀).
Tortrix incarnana, Haworth; Stephens; Wood, fig. 966 (♂); Hübner.

SPECIES 7.—PHILALCEA PAYKULLIANA[b].—(Plate LXXXV., Fig. 22.)—Measures ½ an inch in expanse; fore wings hoary, clouded with ashy, with the base black, and with a very slender, transverse, minute, black streak in the apical part of the wings towards the tip; hind wings whitish. Taken in woods, in March, among dried leaves.

[b] SYNONYME.—*Pyralis Paykulliana*, Fabricius (?); Haworth; Stephens; Wood, fig. 967.

SPECIES 8.—PHILALCEA FIMBRIANA[c].—(Plate LXXXV., Figs. 23, 24.)—Measures about ½ an inch in expanse; very variable; fore wings white, with fine lineolæ, and clouds of black, the inner margin more ashy, the apex with a brown spot, the inner margin with a black lunule rather before the middle, and another beyond of brown near the anal angle, the inner angles of each directed towards the tips of the wings. A singular variety occurs with the fore wings black, the costa broadly white with abbreviated blackish strigæ and dots; the tip with a round brunneous spot imperfectly edged with white and black; all the intermediate varieties, however, occur. Taken in birch woods, in June.

[c] SYNONYMES.—*Tortrix fimbriana*, Thunberg; Stephens; Wood, fig. 968.
Tortrix sesquilunana, Haworth. *Phoxopteris triquetrana*, Godart, (Hübner?).

SPECIES 9.—PHILALCEA BILUNANA[d].—(Plate LXXXV., Fig. 25.)—Measures ½ an inch in expanse; fore wings buff-whitish, slightly clouded with ashy, the costa slightly marked with dusky streaks; the inner margin, before the middle, is marked with an oblique, black, semilunate spot, the tip directed towards the apex of the wings; there is also an obscure ashy patch near the anal angle; the apical angle being destitute of the round brunneous spot of the preceding species; the hind wings whitish. Taken in the crevices of the bark of birch-trees, in woods, at the beginning of June.

[d] SYNONYMES.—*Tortrix bilunana*, Haworth; Stephens; Wood, fig. 969.
Phoxopteris cretaceana, Duponchel.

SPECIES 10.—PHILALCEA SUBOCELLANA[e].—(Plate LXXXV., Fig. 26.)—Measures rather less than ½ an inch in expanse; this bears considerable resemblance to P. ramella, but is smaller, and has the fore wings retuse at the tip, with the tips not produced; they are whitish, with the base ashy, and irrorated with black; the middle of the wings whitish, the extremity blackish, with a large subobsolete leaden or silvery patch with small black dots, and edged with white; the costa obliquely lineolated with black, and the tip with a brunneous spot edged with black; hind wings brown, with the fringe silky, and pale buff. Taken about the beginning of July, in hedges; the caterpillar feeds within the leaf of the sallow, about the middle of September.

[e] SYNONYMES.—*Phalæna Tortrix subocellana*, Donovan, xii., pl. 381, fig. 1; Haworth; Stephens; Wood, fig. 970.
Phoxopteris campoliliana, Duponchel, pl. 251, fig. 1.

SPECIES 11.—PHILALCEA ASSECLANA[f].—(Plate LXXXV., Fig. 27.)—Measures about ½ an inch in expanse; fore wings more obtuse than in the last-described species, which this much resembles; but it is rather larger, and differently coloured; fore wings whitish, with bluish scales; beyond the middle brown, with a subocellated silvery spot enclosing some black lineolæ placed transversely; the entire margins ashy, and near the tip is a round pitchy spot; the ashy costa marked with black lineolæ beyond the middle; hind wings brown. Taken in the Kentish woods, in July.

[f] SYNONYMES.—*Tortrix asseclana*, Hübner; Stephens; Wood, fig. 971.
Phalæna Tortrix succedana, Wien. Verz.; Duponchel; Curtis. *Tortrix decorana*. Haworth.

SPECIES 12.—PHILALCEA MITTERBACHERIANA[g].—(Plate LXXXV., Figs. 28, 29, 30.)—Measures 6 or 7 lines in expanse; very variable; fore wings whitish, buff, brownish, reddish-brown, or dark brown, and more or less suffused and streaked with brown; rather before the middle is a rectangular conspicuous pale white fascia, and another oblique one beyond the middle, the latter more obsolete and interrupted, and also more or less dotted with silver, the intermediate space darkest, and beyond this fascia are often two or three minute black dots; the costa prettily strigose with white lineolæ; at the tip of the wing is a round rufous-brown spot; the hind wings are brown. The ground-colours of the wing and the strength of the markings are very variable, scarcely two specimens agreeing together. Found in plenty throughout the summer.

[g] SYNONYMES.—*Tortrix Mitterbacheriana*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 972.
Phalæna Tortrix trimaculana, Donovan, xi. pl. 369, fig. 1.

DESCRIPTION OF PLATE LXXXVI.

INSECTS.—Fig. 1. Roxana arcuana (the arched).
„ Fig. 2. Carpocapsa pomonella (the codling moth).
3. Caterpillar.
„ Fig. 4. Carpocapsa splendana (the splendid).
„ Fig. 5. Carpocapsa grossana (the smoky marble).
„ Fig. 6. Carpocapsa aspidiscana (the spotted).
„ Fig. 7. Carpocapsa Wœberana (the Weberian).
8. Caterpillar. 9, 10, 11. Chrysalis.
„ Fig. 12. Carpocapsa Rheediella (the Rheedian).
„ Fig. 13. Carpocapsa ulicetana (the light striped edge).
INSECTS.—Fig. 14. Carpocapsa hypericana (the yellow-striped edge).
15. Caterpillar.
„ Fig. 16. Carpocapsa Leplastriana (the Leplastrian).
„ Fig. 17. Carpocapsa perlepidana (the beautiful crescent).
„ Fig. 18. Carpocapsa juliana (Bentley's marble tortrix).
PLANT. — Fig. 19. Hypericum pulchrum (St. John's wort).

All the insects figured on this plate are from Mr. Bentley's cabinet, except Carpocapsa aspidiscana, which is from Wood's figure.

ROXANA, STEPHENS.

The palpi, in the elegant insect which is the type of this genus, are compressed, bent upwards, with a subclavate mass of scales, which, however, leave the terminal joint exposed; the antennæ are slender; the head tufted on the crown; the fore wings deflexed during repose; the apical margin slightly rounded; the disk dark coloured, and bearing several slender silvery strigæ.

SPECIES 1.—ROXANA ARCUANA[h].—(Plate LXXXVI., Fig. 1.)—Measures 7 or 8 lines in expanse; fore wings fulvous, irrorated with brown scales; the costa near the base with a silvery patch; a silvery transverse striga before the middle of the wing; the space between the middle and the anal angle occupied by a pale buff dash, and a black patch crowded with silvery scales, which is followed by two other silvery more oblique strigæ, the innermost of which is interrupted in the middle; hind wings dark brown. Taken in woods, at the end of June.

[h] SYNONYMES.—*Phalæna Tortrix arcuana*, Linnæus; Donovan, xi., plate 364, f. 1; Hübner; Haworth; Stephens; Wood, fig. 973.
Phalæna Tortrix lambergiana, Scopoli.

CARPOCAPSA, TREITSCHKE. SEMASIA, STEPHENS (OLIM).

The palpi are clothed with short scales, not forming a clavate mass, and with the apical joint exposed; the antennæ are short and setaceous; the head is densely clothed with short scales; the fore wings are slightly convoluted in repose; they are oblong, with the apical margin with a faint emargination towards the costa; the disk beyond the middle generally marked with a metallic patch, enclosing several black transverse dashes.

SPECIES 1.—CARPOCAPSA POMONELLA[i].—(Plate LXXXVI., Figs. 2, 3.)—Measures from 8 to 10 lines in expanse; fore wings ashy-brown, the base darker, and with numerous dusky strigæ; the costa marked with dark lineolæ, and the anal angle with a large golden-red subocellated patch, clouded with darker coppery shades; hind wings dark brown, the base rather paler. The caterpillar feeds within the fruit of the apple, causing it to fall prematurely, and by this means occasioning much damage in apple districts.—See my article on this species, in Loudon's "Gardeners' Magazine," vol. xiv., p. 234. The perfect insect appears in June and July, and is found in gardens and orchards, but not very abundantly.

[i] SYNONYMES.—*Phalæna Tinea pomonella*, Linnæus; Wilkes, pl. 9; Stephens; Wood, fig. 974.
Pyralis pomona, Fabricius; Haworth.

SPECIES 2.—CARPOCAPSA SPLENDANA[j].—(Plate LXXXVI., Fig. 4.)—Measures from 7 to 9 lines in expanse; fore wings ashy, clouded with grey, beyond the middle brown, with an oblique fascia beyond the middle whitish; and an ocellated violaceous patch towards the anal angle, with a slightly golden gloss, and bearing a few black streaks within, the costa is also obliquely strigose; the hind wings are brown, with a slender black marginal line. Taken in the woods round London, but rare.

[j] SYNONYME.—*Tortrix splendana*, Hübner; Stephens; Wood, fig. 975.

SPECIES 3.—CARPOCAPSA GROSSANA[k].—(Plate LXXXVI., Fig. 5.)—Measures from 7 to 9 lines in expanse; fore wings smoky-ash, streaked with black, especially along the costa; across the middle is an oblique ashy-whitish fascia, followed by an obscure black patch at the anal angle, which bears some transverse dark lines; hind wings smoky-ash, with brown fringe. Taken in the New Forest, and also in the Kentish woods, in June.

[k] SYNONYME.—*Tortrix grossana*, Haworth; Stephens; Wood, fig. 976.

SPECIES 4.—CARPOCAPSA ASPIDISCANA[l].—(Plate LXXXVI., Fig. 6.)—Measures rather more than ½ an inch in expanse; fore wings rusty-brown, with small black dots, and with a dark ashy rectangular fascia across the middle; the costa with short oblique silvery streaks, arranged in pairs; and near the anal angle is a subocellated spot, with a silvery margin, and bearing several small black transverse streaks; the hind wings are brownish-grey, with paler fringe. Taken near London, and in the north of England; but rare.

[l] SYNONYME.—*Tortrix aspidiscana*, Hübner; Curtis; Stephens; Wood, fig. 978.

SPECIES 5.—CARPOCAPSA WŒBERANA[m].—(Plate LXXXVI., Figs. 7, 8, 9, 10, 11.)—Measures 6½ to 8 lines in expanse; fore wings fulvous, varied with numerous brown, golden, and silvery lineolæ on the costa, and with darker strigæ and fasciæ (more or less rectangular) on the disk; towards the anal angle is a subocellated patch, imperfectly edged with gold, and with black transverse strigæ; the fringe varied, with fulvous and black; the hind wings black, or blackish-brown, with pale fringe. The caterpillar is pale dirty-greenish, with a red head, and feeds beneath the bark of the plum, which it thus loosens, and causes the tree to decay. It forms irregular cocoons of a fulvous colour. Mr. Spence found it in apple orchards, plentifully. The perfect insect appears in June.

[m] SYNONYMES.—*Pyralis Wœberana*, Wiener Verz.; Fabricius; Haworth; Stephens; Wood, fig. 977.
Tortrix unguicana, Turton.
Tortrix ornatana, Hübner.
Phalæna Tinea unguicella, Linnæus.

SPECIES 6.—CARPOCAPSA RHEEDIELLA[n].—(Plate LXXXVI., Fig. 12.)—Measures 6 or 7 lines in expanse; fore wings brunneous; beyond the middle fulvous; the dark base terminated by an oblique dark brown fascia margined with gold, rising to the anal angle of the wing; beyond this are two oblique, golden, abbreviated strigæ running from the costa, and a third interrupted, which passes from the costa to the inner margin, behind three black dots placed transversely near the anal angle; hind wings brown, with the outer portion paler. Taken in June, in woods round London, the New Forest, etc.

[n] SYNONYMES.—*Phalæna Tinea Rheediella*, Linnæus; Donovan, xii., pl. 377, fig. 1; Haworth; Stephens; Wood, fig. 979.
Tortrix aurana, Hübner.
Tortrix albersana, Hübner.

SPECIES 7.—CARPOCAPSA ULICETANA[o].—(Plate LXXXVI., Fig. 13.)—Measures 6 or 7 lines in expanse; fore wings pale ashy; the costa streaked with fulvous and whitish lineolæ extending into the disk; towards the anal angle is a black spot, edged behind with an interrupted silvery annulus, preceded by two or three brown dots placed within an obscure, sub-fulvous patch; hind wings brown. Very variable in the ground-colours of the wings. Taken in March and again in August, in hedges and in the neighbourhood of furze-bushes on commons.

[o] SYNONYMES.—*Tortrix Ulicetana*, Haworth; Curtis.
Tortrix lanceolana, Hübner (?); Stephens; Wood, fig. 980.
Tortrix Zachana, Hübner.

SPECIES 8.—CARPOCAPSA HYPERICANA[p].—(Plate LXXXVI., Figs. 14, 15.)—Measures ½ an inch in expanse; fore wings yellowish-fulvous coloured, the costa beyond the middle bearing slender, elongated, dusky lineolæ, and some silvery ones behind; towards the anal angle is an obscure silvery ocellus, almost obliterated, with two or three very minute black dots placed transversely; hind wings brown. Taken in woods, in May and June; but rare.

[p] SYNONYME.—*Tortrix Hypericana*, Hübner; Haworth; Stephens; Wood, fig. 981.

SPECIES 9.—CARPOCAPSA LEPLASTRIANA[q].—(Plate LXXXVI., Fig. 16.)—Measures from 5½ to 7 lines in expanse; fore wings "transversely streaked with very fine black waved lines; about 16 white marks on the costa, descended obliquely in ochreous lines, alternating with five or six dull silvery ones; several double whitish lines at the interior margin, two at the middle lengthened and arched; near the posterior angle is an oval silvery ring, the centre ochreous, bearing three black dots or lines; inferior wings brown, with a yellowish rosy tinge."—Curtis. Taken near Dover, at the beginning of July.

[q] SYNONYME.—*Carpocapsa Leplastriana*, Curtis, Brit. Ent., pl. 352; Stephens; Wood, fig. 982.

SPECIES 10.—CARPOCAPSA PERLEPIDANA[r].—(Plate LXXXVI., Fig. 17.)—Measures 5 or 6 lines in expanse; fore wings ashy-fulvous, varied with brown, but towards the base on the inner margin, brown; the costa is

prettily streaked with brown and silver; in the middle of the inner margin is a slender, silvery, semilunate mark, in which is a very slender brown striga; this lunule is followed by a black patch which terminates in a subocellated spot, with an interrupted golden iris, and with four oblong black dots forming a transverse pupil; the fringe in certain positions is golden and very glossy; hind wings brownish. A widely-dispersed but rare species.

[s] SYNONYME.—*Tortrix perlepidana*, Haworth; Stephens; Wood, fig. 983.

SPECIES 11.—CARPOCAPSA JULIANA[t].—(Plate LXXXVI., Fig. 18.)—Measures 7 lines in expanse; fore wings grey at the base, with patches of brown extending from the costa into the disk of the wing; the space near the extremity of the costa buff, with oblique blackish lineolæ; near the base of the inner margin is a small, conical, blackish spot, followed by a large white space; towards the anal angle is a large maculated patch varied with silvery scales and black transverse lines, and resting on a ferruginous base; the apical margin also ferruginous; hind wings brown, with a golden tinge. Taken in Suffolk and at Killarney, by Mr. Curtis; also in the New Forest, near Lyndhurst, by Mr. Bentley, in July.

[t] SYNONYME.—*Philalcea Juliana*, Bentley; Curtis, Brit. Ent., pl. 583; Stephens; Wood, fig. 1678.

DESCRIPTION OF PLATE LXXXVII.

INSECTS.—Fig. 1. Carpocapsa stelliferana (the Starry Tortrix).
„ Fig. 2. Carpocapsa pupillana (the Wormwood Tortrix).
„ Fig. 3. Carpocapsa fulvana (the fulvous sealed).
„ Fig. 4. Carpocapsa cana (the hoary-sealed).
„ Fig. 5. Carpocapsa Scopoliana (the Scopolian).
„ Fig. 6. Carpocapsa rufana (the red-sealed).
„ Fig. 7. Bactra egenana (the dusty drab).
„ Fig. 8. Bactra pauperana (the spotted drab).
„ Fig. 9. Bactra egestana (the lesser drab).
INSECTS.—Fig. 10. Bactra fuscana (the brown drab).
„ Fig. 11. Ablabia expallidana (the pale drab).
„ Fig. 12. Bactra uliginosana (the darkling drab).
„ Fig. 13. Ablabia quadripunctana (the dotted drab).
PLANT. — Pyrus domestica (True-service tree).

All the insects figured in this plate are from the cabinet of Mr. Bentley, except C. stelliferana, from the fig. of Mr. Curtis of an insect in his cabinet.

SPECIES 12.—CARPOCAPSA STELLIFERANA[u].—(Plate LXXXVII., Fig. 1.)—Measures ½ an inch in expanse; "yellow, cinereous, shining; superior wings with ten whitish spots on the costa, none at the base, two or three producing silvery lines; a whitish spot on the interior margin, and another nearer the middle; an indistinct silvery oval near the posterior angle containing three black dots; inferior wings whitish at the base."—Curtis. Taken in Perthshire, and elsewhere in the north of England.

[u] SYNONYME.—*Carpocapsa stelliferana*, Curtis; Stephens; Wood, fig. 984.

SPECIES 13.—CARPOCAPSA PUPILLANA[v].—(Plate LXXXVII., Fig. 2.)—Measures about 8 lines in expanse; fore wings white, slightly shaded with brownish towards the costa and along the inner margin; before the middle of the wing is an oblique, blackish, abbreviated fascia; another, rather broader, runs across the wing from the middle of the costa to the anal angle, where it branches off into an arch extending nearly to the apical angle and enclosing a glossy, ocellated patch composed of numerous small black dots; the costa beyond the middle is slightly spotted with brown, and the apex itself is brown, with two small white dots; hind wings dark brown. Variable, the dark markings being sometimes obliterated. The caterpillar feeds on wormwood, amongst which the moth occurs, especially on our coasts, in June.

[v] SYNONYMES.— *Phalæna Tortrix pupillana*, Linnæus; Fabricius; Stephens, Illustr., 4, pl. 34, fig. 2; Wood, fig. 985; but not of Haworth.
Tortrix absinthiana, Hübner; Haworth.

SPECIES 14.—CARPOCAPSA FULVANA[w].—(Plate LXXXVII., Fig. 3.)—Measures 9 or 10 lines in expanse; fore wings somewhat fulvous; the costa marked with numerous short, oblique whitish, and fulvous striolæ, and

the tip acute; near the anal angle is a subocellated spot, with an interrupted silvery iris, and three short, interrupted, black lineolæ in the place of the pupil; hind wings dark brown. Taken in fields near woods, but not common.

[v] Synonymes.—*Carpocapsa fulvana*, Stephens; Wood, fig. 986.
Tortrix pupillana, Haworth, but not of Linnæus, etc.

Species 15.—Carpocapsa strigana, Curtis.—Similar to C. fulvana, but smaller, and pale ochreous; the superior wings are much shorter and less lanceolate.

Species 16.—Carpocapsa cana[w].—(Plate LXXXVII., Fig. 4.)—Measures 8 or 9 lines in expanse. Very similar to C. fulvana, but differs in its hoary colour, with fulvescous clouds, the costal striolæ being more silvery, and behind the middle of the wing runs a paler longitudinal dash enclosing a short fulvescent streak; the subocellated spot near the anal angle is more silvery and less interrupted, and the three pupillated lineolæ less broken; the hind wings are brown, with the base paler. A widely-dispersed but not common species. Taken in June and July, in pastures.

[w] Synonyme.—*Tortrix cana*, Haworth; Stephens; Wood, fig. 987.

Species 17.—Carpocapsa Scopoliana[x].—(Plate LXXXVII., Fig. 5.)—Measures 7 to 9 lines in expanse; fore wings rich chestnut-brown; the costa broadly pale, luteous-brown, alternately streaked with somewhat rufous and pale oblique lineolæ, one of the rufous lineolæ in the middle of the costa more distinct; a dark longitudinal dash runs along the middle of the wing, and the middle of the inner margin is marked with a pale patch, and within the anal angle is another smaller and subocellated patch with an obscure silvery iris, and two or three minute black dots for the place of the pupil; the hind wings are dark brown. Very variable in the colour of the wings, and in the greater or less distinctness of the characteristic markings. Taken in June, in various localities.

[x] Synonyme.—*Tortrix Scopoliana*, Haworth; Stephens; Wood, fig. 988.

Species 18.—Carpocapsa rufana[y].—(Plate LXXXVII., Fig. 6.)—Measures 9 lines in expanse; "fore wings narrow, deep, immaculate, tawny-red, the costa pale; on the hinder margin near the anal angle is a very obscure, somewhat ocellated, silvery spot, with three fulvescent lines in the middle; cilia pale tawny; hind wings brown. Found at Darenth, in July."—Stephens.

[y] Synonymes.—*Carpocapsa rufana*, Stephens; Wood, fig. 989.

Species 19.—Carpocapsa maritima[z].—Measures 6 lines in expanse; fore wings very pale grey, the costal portion almost white at the base; along the inner margin is a browner patch terminating on the disk in a darker dot; the costa beyond the middle is white, with numerous slender, dark, oblique lineolæ; the apex of the wing is marked by a small, oblique, dark streak, terminating the pale costal portion; near the anal angle is a white blotch surrounded by a silvery ocellus, bearing some minute black dots on its circumference towards the base and apex, and a slight black streak on its anterior margin; hind wings pale, shiny, greyish-brown. Taken on the sea-wormwood, near St. Osyth, in Essex.

Obs.—Mr. Curtis doubtingly adds the Tortrix Germana of Hübner to this genus.

[z] Synonyme.—*Carpocapsa maritima*, Dale's MSS. (?) Douglas, in Entomologist, p. 385.

BACTRA, Stephens, Curtis. APHELIA, Stephens, Catal.

The palpi are porrected and densely clothed with scales, forming a very dilated mass, concealing the terminal joint; the antennæ are setaceous; the head thickly squamose; the fore wings long, narrow, and lanceolate, with

the apical margin obliquely truncate; the apical angle acute; the disk almost destitute of markings; they are somewhat decumbent in repose; the body is rather short, and tufted in the males. The species frequent damp and rushy situations.

SPECIES 1.—BACTRA EGENANA[a].—(Plate LXXXVII., Fig. 7.)—Measures 7½ lines in expanse; fore wings dirty reddish-buff, beyond the middle slightly irrorated with brown scales; hind wings brownish-white; fringe of all the wings pale buff; fore wings beneath darker brown. Found in damp situations, in May; Coombe Wood, Surrey.

[a] SYNONYME.—*Tortrix egenana*, Haworth; Stephens; Wood, fig. 990.

SPECIES 2.—BACTRA PAUPERANA[b].—(Plate LXXXVII., Fig. 8.)—Measures 7½ lines in expanse; fore wings obscure brown, with a golden gloss, obliquely truncate at the tips, with two small oblong darker brown spots on the disk, one towards the base almost obsolete, the second beyond the middle curved and more distinct; a small dark brown dash also at the apex, and another, smaller, in the middle of the apical margin. Mr. Haworth's typical specimens of this species have the costa, as well as the inner margin, slightly dotted with brown. This is even the case with his variety β, which has the discoidal spot obliterated; hind wings brown. Taken in damp places, Surrey, in May and the beginning of June.

[b] SYNONYME.—*Tortrix pauperana*, Haworth; Curtis, Brit. Ent., pl. 599; Stephens; Wood, fig. 941.

SPECIES 3.—BACTRA EGESTANA[c].—(Plate LXXXVII., Fig. 9.)—Measures 7 lines in expanse; fore wings obscure reddish-buff, obliquely truncated at the tip and immaculate, the inner margin of the wing bearing a very slender black line without the minute black dots; hind wings brown; fringe shining, whitish-buff; antennæ short and slender. Taken near London amongst rushes, in June,

[c] SYNONYME.—*Tortrix egestana*, Haworth; Stephens; Wood, fig. 992.

SPECIES 4.—BACTRA PLAGANA[d].—Measures 7½ lines in expanse; fore wings dark golden-brown, with a broad blackish striga running down the middle of the wing from the base to the apical angle, and occupying nearly a third of the whole wing, but occasionally being less distinct; hind wings brown, with paler fringe. Taken near London, and in Norfolk, but rare, in May and July.

[d] SYNONYME.—*Tortrix plagana*, Haworth; Stephens; Wood, fig. 993.

SPECIES 5.—BACTRA FUSCANA[e].—(Plate LXXXVII., Fig. 10.)—Measures 8½ lines in expanse; fore wings golden-brown, or brown, much mottled with chestnut patches, one of which is of large size, near the base of the wing; another is curved, and placed in the middle; and three, forming a triangle, towards the extremity, the outer one being placed upon the margin itself; the apex also with the dark dot; the remainder of the wing is prettily marked with minute fulvous irrorations; hind wings brown. Taken amongst reeds, surrounding the fresh-water lake at Napton Lee, in Devonshire (from which Col. Montague obtained so many of the species of aquatic birds now in the collection of the British Museum), at the end of June, by Mr. Bentley. The markings in some specimens are less distinct.

[e] SYNONYME.—*Ablabia fuscana*, Chant's MS.

SPECIES 6.—BACTRA ULIGINOSANA[f].—(Plate LXXXVII., Fig 12.)—Measures 9 lines in the expanse of the fore wings, which are of a pale buff colour, and having a satiny gloss; on the disk, towards the base, are a very few very minute black atoms scattered about, and on the middle of the disk a black dot; hind wings paler, and glossy; the fore wings are much broader than in any of the other species, and have the costal margin much

arched, and the apex acute; the palpi are broadly conical at the tip, with the terminal joint exposed. Two specimens were taken at Whittlesea Mere, in July, 1824, by Mr. Bentley, in whose cabinet they are preserved. This insect ought probably to be formed into a distinct genus.

[f] Synonyme.—*Bactra uliginosa*, Bentley's MS.

ABLABIA, Hübner, Stephens. BACTRA,** Curtis (599).

The palpi in this genus are much more elongated and slender than in the preceding, with the penultimate joint not covered by a clavate mass of scales, and with the terminal joint moderately long, and quite distinct; the antennæ are simple; the head slightly tufted in front; the fore wings glossy, acutely truncate at the tip; the disk plain, and nearly destitute of markings.

Species 1.—Ablabia 4-punctana[g].—(Plate LXXXVII., Fig. 13.)—Measures from 9 to 11 lines in expanse; fore wings rufescent or pale, with a reddish tinge, varied with small dusky blotches, placed longitudinally; the first small before the middle, the second thrice as large, and angulated near the middle, the third near the apical margin, and the fourth nearly at the anal angle; the costa obsoletely spotted with brown; hind wings dark reddish-brown. The markings on the wings vary greatly in intensity. One received by Mr. Haworth from Mr. Dale, with the name of *Cantiana*, now in my collection, has the first spot scarcely visible, the second small and oblong, and the others obliterated, the inner margin hoary, and the apical portion of the wing irrorated with brown dots. A very widely-dispersed species; taken but rarely, in July and August.

[g] Synonymes.—*Tortrix quadripunctana*, Haworth; Stephens; Wood, fig. 995.
Tortrix pratana, Hübner.

Species 2.—Ablabia expallidana[h].—(Plate LXXXVII., Fig. 11.)—Measures ½ an inch in expanse; fore wings entirely pale whitish-buff and semipellucid, with a buffish tinge along the costal margin; the palpi are *deflexed**, with the terminal joint distinct, and the preceding joint much less thickly squamose than in the types of the genus Bactra. The insect has, indeed, much of the appearance of some of the insects of the following family, but the arrangement of the veins of the wings reduces it to its present station.

[h] Synonyme.—*Tortrix expallidana*, Haworth; Stephens; Wood, fig. 994.

DESCRIPTION OF PLATE LXXXVIII.

Insects.—Fig. 1. Cnephasia asinana (the large grey elm).
„ Fig. 2. Cnephasia longana—3, pale variety—(the long winged).
„ Fig. 4. Cnephasia ictericana—5, var.—(the jaundiced drab).
„ Fig. 6. Cnephasia sinuana (the waved elm).
„ Fig. 7. Cnephasia Penziana (the penzian).
„ Fig. 8. Cnephasia interjectana (the lesser grey elm).
„ Fig. 9. Cnephasia Logiana (the logian).
„ Fig. 10. Cnephasia obsoletana (the obscure elm).
Insects.—Fig. 11. Cnephasia rectifasciana (the straight-barred elm).
„ Fig. 12. Cnephasia curvifasciana (the curve-barred elm).
„ Fig. 13. Cnephasia littoralis (the mottled coast Tortrix).
„ Fig. 14. Cnephasia nubilana (the smoky grey).
„ Fig. 15. Cnephasia perfuscana (the deep brown).
„ Fig. 16. Cnephasia cinerana (the pale ash).
Plant.—Fig. 17. Saxifraga geum (kidney-leaved saxifrage).
All the insects on this plate are from Mr. Bentley's cabinet, except C. curvifasciana, which is from Mr. Wood's very excellent figure.

CNEPHASIA, Curtis, Stephens.

The palpi are porrected, ascending, with the second joint thickly squamose, but not forming a dense clavate mass; with the terminal joint moderately long and distinct; the antennæ are slender and scaly, having a slightly

* Mr. Stephens's specimen does not probably belong to the genus, as he describes the palpi as slightly curved over the back. My description is made from Mr. Haworth's typical individual now in my cabinet.

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serrrated appearance in the males; the crown of the head is tufted; the wings, when at rest, form an elongated triangle; the fore ones are rather narrow, with the tips rounded; they are generally pale, with darker interrupted or waved fasciæ.

SPECIES 1.—CNEPHASIA ASINANA[i].—(Plate LXXXVIII., Fig. 1.)—Measures 9 to 11 lines in expanse; fore wings ashy-buff, with a rather broad brown fascia near the base, not extending to the inner margin, rather incurved, unangulated, and often dotted with black; a second beyond the middle more distinct, broader, and oblique, with the inner edge much angulato-sinuated; and a third, much less distinct, arising upon the costa near the tip, and often interruptedly continued to the anal angle; the markings are, however, sometimes nearly obliterated, and the ground of the wings paler; hind wings brownish-buff. Taken in various parts of the south of England, in June.

[i] SYNONYMES.—*Tortrix asinana*, Hübner; Haworth; Stephens; Wood, fig. 1000.
Pyralis cretana, Fabricius.

SPECIES 2.—CNEPHASIA LONGANA[j].—(Plate LXXXVIII., Figs. 2, 3.)—Measures 9 or 10 lines in expanse; fore wings narrow, with the tips rounded, luteous-white, with three more or less distinct brown patches, irregularly confluent and transverse, in the basal half of the wing; and three other larger, more irregular, and confluent in the apical portion of the wing; along the apical margin the wings are also occasionally reticulated with brown; hind wings ashy. The colours of the fore wings vary considerably, and the patches are more or less obsolete. Taken in meadows and marshes, in June; but not common.

[j] SYNONYME.—*Tortrix longana*, Haworth; Stephens; Wood, fig. 997.

SPECIES 3.—CNEPHASIA ICTERICANA[k].—(Plate LXXXVIII., Figs. 4, 5.)—Measures 8 or 9 lines in expanse; fore wings pale yellowish-buff, varying to cream colour, immaculate, the tips rounded; hind wings whitish-buff, or with a reddish tinge; fringe almost white and glossy. Taken in damp meadows, in June.

[k] SYNONYME.—*Tortrix ictericana*, Haworth; Stephens; Wood, fig. 998.

SPECIES 4.—CNEPHASIA SINUANA[l].—(Plate LXXXVIII., Fig. 6.)—Measures 8 lines in expanse; fore wings ashy-white; at a short distance from the base is an incurved dark brown fascia, with a tooth in the middle of its outer margin; across the middle of the wing is a broader, dark brown, oblique fascia, extending from the middle of the costa towards the anal angle, and having a tooth on the middle of its inner edge, and its outer edge gradually shaded off; apical margin dark brown; the costa with several dark dots towards the tip. Taken in the Kentish woods; but very rare. Wood's figure, 999, can scarcely represent this insect.

[l] SYNONYME.—*Tortrix sinuana*, Wien. Verz.; Hübner; Stephens; (Wood, fig. 999?).

SPECIES 5.—CNEPHASIA PENZIANA[m].—(Plate LXXXVIII., Fig. 7.)—Measures 11 to 13 lines in expanse fore wings white, speckled with small black dots, and with three irregular fasciæ of the same colour, the first incurved towards the base, terminating towards the inner margin is a slender line, the second wider and oblique, running from the middle of the costa towards the anal angle, and the third parallel with the second, extending to the middle of the apical margin; hind wings white, irrorated towards the outer angle with faint brown; the fasciæ of the fore wings are sometimes broken into distinct dots, such variety constituting Mr. Haworth's species, Cn. octomaculana. Taken amongst lichens upon rocks in the north of England and Scotland, about the beginning of July.

[m] SYNONYMES.—*Tortrix Penziana*, Thunberg (?); Stephens; Wood, fig. 996.
Cnephasia bellana, Curtis, Brit. Ent., pl. 100.

SPECIES 6.—CNEPHASIA INTERJECTANA[n].—(Plate LXXXVIII., Fig. 8.)—Measures about 9 lines in expanse; fore wings whitish-ash, thickly irrorated with numerous subconfluent black atoms, a somewhat oblique brown fascia near the base, acutely unangulated, a second from the middle of the costa, nearly to the anal angle, entire, broad, and not sinuated on the inner margin; the extremity of the wings ashy-brown, with fainter clouds and darker dots; hind wings pale ashy-brown. Taken in June near London and elsewhere.

[n] SYNONYMES.—*Tortrix interjectana*, Haworth; Stephens; Wood, fig. 1001.
Tortrix masculana, Hübner (?).

SPECIES 7.—CNEPHASIA LOGIANA[o].—(Plate LXXXVIII., Fig. 9.)—Measures from 6 to 9 lines in expanse; fore wings with the ground-colour generally ashy-white, but varying to whitish, ashy-brown, dusky, or nearly black, thickly irrorated with dusky dots, and with three sinuated, brown, oblique fasciæ, dotted with black, the first before the middle, the second beyond and broader, extending from the middle of the costa nearly to the anal angle, the third parallel therewith, but narrow and more or less interrupted in the middle, and extending to the middle, and along the hind part of the apical margin; the fasciæ vary in intensity, and are sometimes almost obliterated. A very common species in the neighbourhood of elms; taken in June.

[o] SYNONYMES.—*Phalæna Tortrix Logiana*, Linnæus (?); Haworth; Stephens; Wood, fig. 1002.
Tortrix pascuiana, Hübner.

SPECIES 8.—CNEPHASIA OBSOLETANA[p].—(Plate LXXXVIII., Fig. 10.)—Measures 8 or 9 lines in expanse; fore wings "fuscous, nearly immaculate, with three very obsolete fasciæ, of which the basal one is curved and abbreviated, the second oblique and flexuous, the third short and faintly interrupted, arising on the costa near the apex, and terminating on the middle of the hinder margin. Taken near Ripley, in June."—Stephens.

[p] SYNONYME.—*Cnephasia obsoletana*, Stephens; Wood, fig. 1003.

SPECIES 9.—CNEPHASIA RECTIFASCIANA[q].—(Plate LXXXVIII., Fig. 11.)—Measures 6 or 7 lines in expanse; fore wings ochreous-white clouded with ashy, and with three ashy testaceous fasciæ dotted with black, especially at the edges, the anterior nearly straight, the second central and unisinuated on each side, the third abbreviated, extending from the costa near the apical margin; between the last two fasciæ is a dot on the anal angle, and two dots on the costa, of an ashy testaceous colour; hind wings pale brown. It varies in being smaller and paler, with the fasciæ less distinct, and the middle one less sinuated. Taken in the neighbourhood of elms, and widely dispersed.

[q] SYNONYMES.—*Tortrix rectifasciana*, Haworth; Stephens; Wood, fig. 1004. | *Phalæna Tortrix trifasciana*, Donovan; (Fabricius?).
Tortrix hybridana, Hübner (?).

SPECIES 10.—CNEPHASIA CURVIFASCIANA[r].—(Plate LXXXVIII., Fig. 12.)—Measures 7 or 8 lines in expanse; fore wings whitish-ashy, very minutely irrorated with brown, and with three curved, ashy, testaceous fasciæ dotted with brown; the first broad and angulated near the base; the second rather narrow running across the middle, and narrowed towards the inner margin; the third parallel with the apical margin arising from the interior, but scarcely extending half across the wing; at the anal angle is a patch of the same colour, and two dots on the costa opposite to it; hind wings ashy-brown. Taken in the woods of Kent, in June.

[r] SYNONYME.—*Cnephasia curvifasciana*, Stephens; Wood, fig. 1005.

SPECIES 11.—CNEPHASIA NUBILANA[s].—(Plate LXXXVIII., Fig. 14.)—Measures 6 to 7½ lines in expanse; fore wings with the tips obtuse, deep ashy or dusky brown, with numerous slender, more or less confluent, darker, smoky-brown strigæ, with a somewhat indistinct fascia at the base, and a distinct, broad, nearly straight

fascia of smoky-brown across the wings, beyond the middle, which is occasionally bifid at the costa, and extending to the anal angle, the tip of the wing also with a darker patch; hind wings and fringe deep black. The ground-colour of the wings and the strength of the markings are very variable. Taken in hedges, woods, etc., in June, and very abundant.

[s] Synonyme.—*Tortrix nubilana*, Hübner; Haworth; Stephens; Wood, fig. 1006.

Species 12.—Cnephasia perfuscana[t].—(Plate LXXXVIII., Fig. 15.)—Measures 7 lines in expanse; antennæ slender and reddish; fore wings black or deep brown, shining, immaculate, or with a very few almost indistinct darker markings; hind wings brownish; fringe ashy-brown. Mr. Stephens thinks this may be only a variety of the last species, in company with which it is taken.

[t] Synonyme.—*Tortrix perfuscana*, Haworth; Stephens; Wood, fig. 1007.

Species 13.—Cnephasia formosana[u].—"Pale fuscous, thorax and superior wings rosy-chestnut, the latter with a considerable number of waved, transverse, pale shining lines as far as the middle, beyond which are two more compound ones, with several shorter on the costa, and a row of spots of the same colour at the base of the cilia; abdomen ochreous at the apex. Similar to O. nubilana in size and colour, but the superior wings are a little less obtuse, their colour is very different, and the bar across the middle formed by the waved lines is narrower and more irregular."—Curtis. Locality unknown.

[u] Synonyme.—*Orthotænia formosana*, Curtis, fol. 364.

Species 14.—Cnephasia littoralis[v].—(Plate LXXXVIII., Fig. 13.)—Measures 7½ lines in expanse; fore wings narrow and somewhat lanceolate, pale shining stone-coloured grey, with minute patches of fulvous brown scattered over the wings, especially towards the base, near to which is a short fulvous-brown bar on the inner margin, and a broader and more irregular one, of the same colour, beyond the middle of the wing, extending to the costa, which, beyond the middle, is marked with three or four conspicuous brown dots; the apical portion of the wing with a nearly semicircular patch of fulvous-brown, bearing a silvery-grey streak on the margin, not extending to the tip of the wing, nor to the anal angle; hind wings silvery brownish-grey, with pale fringe. Taken on the southern coast of England, by Messrs. Dale and Curtis.

[v] Synonyme.—*Cnephasia littoralis*, Curtis's Guide.

Species 15.—Cnephasia cinerana[w].—(Plate LXXXVIII., Fig. 16.)—Measures about 9 lines in expanse; fore wings broad ovate, with the costa much arched, especially in the middle, of a very pale ashy colour, with a yellowish-brown tinge; near the base is an abbreviated, rather narrow, rather darker fascia running from the costa half-way across the wing, with a slender darker edging, and with a larger somewhat triangular patch in the middle of the costa, which extends in an obsolete manner to a patch near the anal angle; the apical portion of the wing rather darker, and separated from the paler disk by a semicircular series of short brown streaks; hind wings pale and shining, with the outer angle slightly darker. Taken by Mr. Bentley, in Dartmoor Forest, near Ashburton, Devonshire, in June.

[w] Synonyme.—*Cnephasia cinerana*, Bentley's MSS.

DESCRIPTION OF PLATE LXXXIX.

INSECTS.—Fig. 1. Sericoris quadrimaculana (the blotched drab).
„ Fig. 2. Sericoris striana (the straight-barred).
„ Fig. 3. Sericoris fasciolana (the small barred).
„ Fig. 4. Sericoris urticana (the barred nettle).
„ Fig. 5. Sericoris micana (the silver dotted). 6. A common variety.
„ Fig. 7. Sericoris alternana (the alternate barred).
„ Fig. 8. Sericoris undulana (the silver striped).
„ Fig. 9. Sericoris gramineana (the great barred).
„ Fig. 10. Sericoris cespitana (the meadow barred).
„ Fig. 11. Sericoris politana (the red barred grey).
„ Fig. 12. Sericoris pulchellana (the dark barred grey).
INSECTS.—Fig. 13. Sericoris fuligana (the smoky barred).
„ Fig. 14. Sericoris subsequana (the faint silver striped).
„ Fig. 15. Sericoris myrtillana (the bilberry).
„ Fig. 16. Sericoris aurofasciana (the gold barred).
„ Fig. 17. Sericoris bifasciana (the double-barred orange).
„ Fig. 18. Sericoris furfurana (the mottled bran).
„ Fig. 19. Sericoris marmorana (the marbled dog's tooth).
PLANT. — Fig. 20. Silene inflata (the inflated catchfly).

The insects figured in this plate are from specimens in the cabinet of Mr. Bentley, with the exception of fasciolana, pulchellana, and furfurana, from the plates in Wood, "*Index Entomol.*"

SERICORIS, TREITSCHKE. ORTHOTÆNIA, PARS CURTIS.

The species of this genus have the fore wings rather broad, with a rather broad, irregular, and often broken dark bar on the pale ground across the middle of the wing, being more oblique towards the costa, and with a less distinct one placed obliquely, near the middle of the apical margin; the palpi are short and densely squamose, but with the apical joint acute and exposed, the body long and tufted at the tip in the males, and the females generally smaller than the opposite sex.

SPECIES 1.—SERICORIS QUADRIMACULANA[x].—(Plate LXXXIX., Fig. 1.)—Measures 9 or 10 lines in expanse; fore wings subtruncate on the apical margin, of a pale ashy colour, with a reddish tinge, with several patches of brown on the disk, placed longitudinally, the first small before the middle, the second twice as large, angulated and placed nearly in the middle, the third crescent-shaped near the apical margin, and a fourth towards the anal angle; the costa obsoletely spotted with brown; the hind wings reddish-brown. The female is darker, and wants the reddish tinge. Taken in June near fir-trees, in Kent, Norfolk, and Surrey.

[x] SYNONYMES.—*Tortrix quadrimaculana*, Haworth; Stephens; Wood, fig. 1008.
Tortrix antiquana, Hübner; Curtis.

SPECIES 2.—SERICORIS STRIANA[y].—(Plate LXXXIX., Fig. 2.)—This very variable insect measures from 6 to 10 lines in expanse; of a testaceous or darker brown colour, obsoletely reticulated with darker brown, and occasionally almost atomose, with a strong, straight, dark brown fascia across the middle, obsoletely bidentate on the outer edge, and another smaller near the apical margin, interrupted towards the costa; hind wings brown. In some specimens the wings are darker coloured, with the markings nearly obliterated except the strong central bar. Taken in hedges and woods about the middle of June, and very common.

[y] SYNONYMES.—*Tortrix striana*, Wien. Verz.; Stephens, Illustr.; Wood, fig. 1009.
Pyralis fasciana, Fabricius; Stephens's Catal.; Haworth.
Tortrix rusticana, Hübner.

SPECIES 3.—SERICORIS FASCIOLANA[z].—(Plate LXXXIX., Fig. 3.)—Measures nearly 9 lines in expanse; fore wings cinnamon-grey, scarcely reticulated, and with a slightly oblique, broad, brown fascia, somewhat angulated across the middle, rather broader towards the inner margin, the apical margin with a dark shade of brown, forming a triangular patch; hind wings brown, darkest on the outer margin. Very rare; locality unknown.

[z] SYNONYMES.—*Tortrix fasciolana*, Hübner; Stephens; Wood, fig. 1010.
Phalæna Tortrix biliturana, Donovan, x., pl. 371, f. 2.

SPECIES 4.—SERICORIS URTICANA[y].—(Plate LXXXIX., Fig. 4.)—Measures about $\frac{3}{4}$ of an inch in expanse; fore wings ashy-grey, pale, and irregularly nebulose, with the base and several nearly straight fasciæ of

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brown, the middle of the wing having a broad straight bar of dusky-brown dilated towards the inner margin, and another nearly obsolete and abbreviated fascia towards the middle of the apical margin, not reaching to the costa nor the anal angle; the costa is marked with brown dots and lines beyond the middle. Common in places where nettles abound, during the month of June.

[a] SYNONYME.—*Tortrix urticana*, Haworth; Hübner; Stephens; Wood, fig. 1011.

SPECIES 5.—SERICORIS MICANA[b].—(Plate LXXXIX., Figs. 5, 6.)—Measures about 7 lines in expanse; fore wings grey, varying to olivaceous, and irrorated with dark dots, with an irregular dark fascia at the base, and another broader one in the middle, dilated behind; between these is a pale grey or silvery-white fascia, and beyond them a second, sometimes formed of a row of silvery spots; near the apical margin is an abbreviated oblique fascia, the centre of the wing also sometimes with a silvery dot; the costa, before as well as beyond the middle, dotted with blackish, and the fringe of the fore wings with a dark dot towards the anal angle. Taken in June, but not common.

[b] SYNONYMES.—*Tortrix micana*, Haworth; Hübner (?); Stephens; Wood, fig. 1016.
Sericoris obsoletana, Stephens.

SPECIES 6.—SERICORIS ALTERNANA[c].—(Plate LXXXIX., Fig. 7.)—Measures 7 lines in expanse; shining ochreous-grey; thorax, and superior wings, freckled with black, the latter with nine pairs of pale spots on the costa, the base rather darker, the black spots forming irregular and broken transverse lines, a blackish fascia across the centre, freckled with a few pale scales, having a longitudinal pale line across the middle; the apex rather darkish colour, cilia with a black spot at the tip and middle; inferior wings fuscous. Smaller than S. micana, Hüb., to which it is most nearly allied; the name is given from the alternate dark and pale spaces on the upper wings. Var. β: larger, superior wings more ochreous, the markings brown and less distinct, the cilia immaculate.—Curtis. Taken amongst heath in the Black Wood, Loch Rannoch, in the middle of July.

[c] SYNONYME.—*Orthotænia alternana*, Curtis, Brit. Ent., f. 364A; Stephens; Wood, fig. 1013.

SPECIES 7.—SERICORIS UNDULANA[d].—(Plate LXXXIX., Fig. 8.)—Measures 7 lines in expanse; fore wings ashy-red, with three nearly straight, dark brown fasciæ, obsoletely margined with silvery; the first of these fasciæ is towards the base, and is dotted with black, the second across the middle, interrupted across its centre, and with its inner portion bifid, the third fascia is oblique and distinct, extending nearly to the anal angle; within the apical margin, near the anal angle, is a brown spot; the costa with four pairs of whitish streaks, each pair separated by a brown dot, fringe silvery, with a dark patch near the anal angle. Taken in woods, in June, but not common.

[d] SYNONYMES.—*Tortrix undulana*, Wien. Verz.; Stephens; Wood, fig. 1014.
Pyralis rivellana, Fabricius. *Tortrix conchana*, Hübner; Haworth.

SPECIES 8.—SERICORIS GRAMINEANA[e].—(Plate LXXXIX., Fig. 9.)—Measures 7 lines in expanse; fore wings ferruginous brown, with seven or eight pairs of whitish spots on the costa, with a somewhat silvery serrated fascia, leaving a dark space at the base, apical portion of the same pale colour, leaving a dark and very serrated fascia across the middle; the apex, three triangular spots on the costa, and an oblique lobe-shaped mark rising from the posterior margin, and another near that angle, ferruginous-brown; inferior wings fuscous. Most allied to, and the size of, O. cespitana, Hüb. Taken by Mr. Curtis, at the end of June, on grassy slopes, ascending Arthur's Seat.

[e] SYNONYME.—*Orthotænia gramineana*, Curtis, Guide, and B. E., fo. 364; Stephens; Wood, fig. 1015.

SPECIES 9.—SERICORIS CESPITANA[f].—(Plate LXXXIX., Fig. 10.)—Measures 6½ lines in expanse; fore wings dark brown with the base, a rather curved fascia before the middle, a small nearly central spot, followed by another fascia beyond the middle, deeply furcate; all greyish with a silvery gloss, near the anal angle is a small brown mark, and the costa is marked with silvery oblique striolæ, which unite into a patch near the apex of the wing; hind wings greyish-brown. Taken in Devonshire, Cumberland, and Scotland, in June and July.

[f] SYNONYME.—*Tortrix cespitana*, Hübner; Stephens; Curtis; Wood, fig. 1017.

SPECIES 10.—SERICORIS POLITANA[g].—(Plate LXXXIX., Fig. 11.)—Measures 6½ lines in expanse; fore wings shining, rather glaucous, the base broadly and obliquely brunneous, an oblique sinuated fascia in the middle, and beyond this a more or less broken fascia, reaching from the costa to the anal angle, also brunneous; the costa towards the apex with several dark dots; hind wings brownish. Taken in the New Forest, and in Devonshire, in June.

[g] SYNONYME.—*Tortrix politana*, Haworth; Stephens; Wood, fig. 1018.

SPECIES 11.—SERICORIS PULCHELLANA[h].—(Plate LXXXIX., Fig. 12.)—Measures 6 or 7 lines in expanse; fore wings obtuse, hoary, with a large oblique unangulated fascia of brown at the base, a second broad, undulated, from the middle of the costa nearly to the anal angle, in which, towards the middle of the wing, is a fulvous spot; a third fascia is formed of a semioval costal patch, and another pear-shaped one opposite to it, which scarcely reaches to the inner margin of the wing; fringe brown, towards the tip of the wing blackish; hind wings plumbeous, with white fringe. Taken in the New Forest and near London, in June.

[h] SYNONYME.—*Tortrix pulchellana*, Haworth; Stephens; Wood, fig. 1019.

SPECIES 12.—SERICORIS FULIGANA[i].—(Plate LXXXIX., Fig. 13.)—Measures 6 or 7 lines in expanse; fore wings somewhat ashy, clouded with brown, the base of the wings, an oblique fascia across the middle, and the apical margin black without dots; beyond the middle are some brown clouds and three conspicuous, costal, black dots, edged irregularly with white; hind wings brownish-black. Taken in June, in Norfolk and near London.

[i] SYNONYME.—*Tortrix fuligana*, Hübner; Haworth; Stephens; Wood, fig. 1020.

SPECIES 13.—SERICORIS SUBSEQUANA[j].—(Plate LXXXIX., Fig. 14.)—Measures about 7 lines in expanse; fore wings reddish-grey, shiny, with irregular, somewhat silvery, oblique strigæ, and enclosing a reddish, entire, narrow, oblique fascia, arising from the middle of the costa, and a second towards the apex, being separated by a darker oblique streak, the tip of the wing with a brown dot; and at the anal angle three minute, blackish lineolæ; hind wings whitish, narrow, with the tip broadly brown. Taken near London and Edinburgh, in June.

[j] SYNONYME.—*Tortrix subsequana*, Haworth; Stephens; Wood, fig. 1021.

SPECIES 14.—SERICORIS MYRTILLANA[k].—(Plate LXXXIX., Fig. 15.)—Measures about 4½ lines in expanse; fore wings dark brown, and mottled with black; on the inner margin, towards the base, is an indistinct ashy patch, bearing a dusky line, and a curved, slightly-oblique fascia of the same colour before the middle, followed by a dark brown bar, which is succeeded by a large silvery ashy patch on the anal angle, obsoletely extended obliquely to the costa, and an indistinct one at the apex; the costal margin beyond the middle spotted with black, and pale ashy; hind wings dark brown. Taken by Mr. Chant, on the bilberry, at Hazel Rock, near Ashburton, Devon, in June.

[k] SYNONYME.—*Sericoris myrtillana*, Chant's MS.

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SPECIES 15.—SERICORIS AURO-FASCIANA[l].—(Plate LXXXIX., Fig. 16.)—Measures about ½ an inch in expanse; fore wings rich chestnut-brown, spangled with minute golden scales, which are arranged towards the base of the wings in curved lines, and form a broad incurved fascia before the middle; beyond the middle is a silvery-grey furcate fascia, one branch extending to the middle of the inner margin, and the other to the anal angle; costa beyond the middle alternately golden and brown. Taken in July, at Darenth Wood, Kent, and near Ripley, by Mr. Stephens.

[l] SYNONYME.—*Tortrix auro-faseiana*, Haworth; Stephens, Ill. H., pl. 38, *f.* 3; Wood, fig. 1022.

SPECIES 16.—SERICORIS BIFASCIANA[m].—(Plate LXXXIX., Fig. 17.)—Measures from 5½ to 7 lines in expanse; fore wings pale tawny-clay coloured, finely streaked with fulvous, with the base broadly brown, extending rather obliquely, and with a pear-shaped fascia of brown beyond the middle, dilated towards the costa; the costa from the base to the middle fascia is broadly ashy, beyond which it is slightly streaked with white; hind wings brown. Taken in Kent, in June.

[m] SYNONYME.—*Tortrix bifasciana*, Haworth; Stephens.

SPECIES 17.—SERICORIS FURFURANA[n].—(Plate LXXXIX., Fig. 18.)—Measures about 7 lines in expanse; fore wings dull reddish-grey, clouded and varied with red-brown patches, these patches unite so as occasionally to form two angulated incurved fasciæ, one towards the base, and another across the middle; there is also a broad, very oblique, apical dash, and a dot near the opposite margin towards the anal angle; hind wings brown. Taken in Kent, but very rare.

[n] SYNONYME.—*Tortrix furfurana*, Haworth; Stephens; Wood, fig. 1024.

SPECIES 18.—SERICORIS MARMORANA[o].—(Plate LXXXIX., Fig. 19.)—Measures rather more than 7 lines in expanse; fore wings greyish-brown, thickly marked with curved dusky lineolæ; the base darker, terminated by a darker patch towards the middle of the inner margin; beyond this is a very much angulated fascia of dark brown and chestnut, broken in the middle, the part towards the anal angle being the widest; the apical angle broadly ferruginous, divided obliquely by a whitish streak enclosing the apex, and marked on the costa with about six pairs of short white lines; hind wings brownish. Widely dispersed; being found in Kent, Surrey, Essex, Devonshire, Norfolk, Scotland, etc., in the middle of July.

[o] SYNONYMES.—*Tortrix marmorana*, Hübner; Haworth; Curtis, Brit. Ent., pl. 551; Stephens; Wood, fig. 1025.
Tortrix achatana, Wien. Verz.

DESCRIPTION OF PLATE XC.

INSECTS.—Fig. 1. Notocelia Udmanniana (the Udmannian).
„ Fig. 2. Pœcilochroma Solandriana (the Solandrian).
„ Fig. 3. Pœcilochroma trapezana. 4. A pale variety. 5. A medium var. 6. The Caterpillar.
„ Fig. 7. Pœcilochroma Communana (the marbled diamond back). 8. Light var. (the cock's head).
„ Fig. 9. Pœcilochroma piceana (the shining pitch).
„ Fig. 10. Pœcilochroma vittana (the Niton Tortrix).
„ Fig. 11. Pœcilochroma semifuscana (the half brown).
INSECTS.—Fig. 12. Pœcilochroma maculana (the black double blotched).
„ Fig. 13. Pœcilochroma maurana (the great double bar).
„ Fig. 14. Ptycholoma Lecheana (the Lechean).
„ Fig. 15. Ptycholoma obsoletana (the obsolete).

The insects figured in this plate are from specimens in the cabinet of Mr. Bentley, with the exception of *Maurana* and *Obsoletana*, from the figures in Wood. The Caterpillar is from Hübner, H. N. H.

NOTOCELIA, HÜBNER. ASPIS, TREITSCHKE.

The palpi are short, bent downwards, and very much squamose, forming a compressed and clavate mass, in which the terminal joint is concealed. The antennæ of the males are slightly serrated; the thorax stout; the

fore wings broad, short, slightly emarginate at the apex; the disk almost immaculate, but with a large triangular blotch near the anal angle.

SPECIES 1.—NOTOCELIA UDMANNIANA[p].—(Plate XC., Fig. 1.)—Measures from 7 to 8½ lines in expanse; fore wings brown, or ashy-brown, faintly streaked with darker brown; towards the anal angle is a large chestnut conical patch, edged with a broad fascia, rather paler than the disk of the wing, the outer portion extending to the costa, beyond which the costa is darker, with slight whitish streaks, arranged in pairs. Widely dispersed, and not uncommon in woods. Taken in June.

[p] SYNONYMES.—*Phal. Tortrix Udmanniana*, Linnæus; Donovan, 5, pl. 153, fig. 1—3; Haworth; Stephens; Wood, fig. 1026.
Pyralis Solandriana, Fabricius.
Tortrix achatana, Hübner.

PŒCILOCHROMA, STEPHENS. SPILONOTA, PARS CURTIS.

The palpi are densely squamose, but with the terminal joint exposed; the antennæ of the males are pubescent within, but simple in the females; the fore wings large, rounded behind, "rarely fasciated, but mostly dotted or freckled with dark colours, and having a more or less distinct pale blotch on the middle of the inner margin, or margin is entirely pale." They are also of a somewhat larger size than many of the foregoing species.

SPECIES 1.—PŒCILOCHROMA SOLANDRIANA[q].—(Plate XC., Fig. 2.)—Measures about ¾ of an inch in expase; fore wings pale, minutely atomose, the costa obsoletely dotted with brunneous; in the middle of the inner margin is a large semi-oval patch, of rusty-brown, the edge of which is rather irregular; hind wings brownish. Widely dispersed, but not a common species. Taken in woods and forests, about the end of July.

[q] SYNONYMES.—*Phal. Tortrix Solandriana*, Linnæus; Haworth; Stephens; Wood, fig. 1027.
Pyralis Udmanniana, Fabricius.
Tortrix semi-maculana, Hübner.
Pœdisca parmatana, var. Fisch. Microlep.

SPECIES 2.—PŒCILOCHROMA TRAPEZANA[r].—(Plate XC., Figs, 3, 4, 5, 6.)—This very variable species measures from 8 to 10½ lines in expanse; fore wings brown, grey-brown, reddish, or greyish-red, with the intervening shades of colour, and more or less marked with brown or black shades, but sometimes almost destitute of these shades; on the middle of the inner margin of the wing is a large triangular pale blotch (but very variable in its colour), enclosed within a darker margin, and having its outer margin more or less distinctly dotted with the ground-colour of the wing; hind wings brown. Taken in woods, about the beginning of August. The caterpillar is green, speckled with minute black dots.

[r] SYNONYMES.—*Pyralis trapezana*, Fabricius; Haworth; Stephens; Wood, fig. 1028, m and f.
Pyralis profundana, Fabricius; Haworth (variety).
Pyralis Brunnichiana, Fabricius; Haworth (variety).
Pyralis Sparmanniana, Fabricius; Stewart; Stephens, Catal. (variety).

SPECIES 3.—PŒCILOCHROMA COMMUNANA[s].—(Plate XC., Figs. 7, 8.)—This very variable insect measures from 6 to 7½ lines in expanse; and has the fore wings varied with black, brown, ashy-white, green, and brunneous, these colours being more or less distinct, and occasionally almost suffused into an uniform blackish hue, with a dark central longitudinal streak, dilated towards the inner margin, near the base, and followed by a large pale patch of white with brown dots, bearing considerable resemblance to the head of a cock, looking towards the apical margin of the wings when expanded; the anal angle also marked with a pale patch. and the costa dotted with black and white; hind wings brown. Common in June.

[s] SYNONYMES.—*Pyralis communana*, Fabricius; Haworth; Stephens; Wood, fig. 1029.
Tortrix corticana, Hübner.
Zeiraphora Lichenana, Treitschke.

SPECIES 4.—PŒCILOCHROMA PICEANA[t].—(Plate XC., Fig. 9.)—Measures from 8 to 10 lines in expanse; fore wings glossy, pitch coloured, immaculate, or irrorated with brown, and occasionally with ferruginous, or with indistinct darker markings, and sometimes with a central testaceous streak; hind wings very pale brownish and glossy, but occasionally darker brown. Taken on heaths, in August and September, in Surrey and Hampshire.

[t] SYNONYME.—*Tortrix piceana*, Haworth; Stephens; Wood, fig. 1030.

SPECIES 5.—PŒCILOCHROMA SEMIFUSCANA[u].—(Plate X C., Fig. 10.)—Measures from 8 to 10 lines in expanse; fore wings glossy, with the costa broadly dark brown, and the inner margin white, the former colour emitting a short rounded lobe before, and a longer oblique branch towards the anal angle, and two or three smaller irregular markings within the apical margin. Taken in the New Forest, in August.

[u] SYNONYME.—*Pœcilochroma semifuscana*, Stephens, Ill. H., pl. 36, fig. 1; Wood, fig. 1031.

SPECIES 6.—PŒCILOCHROMA MACULANA[v].—(Plate XC., Fig. 12.)—Measures 10 or 11 lines in expanse; fore wings ashy-grey, with the basal portion dark and nebulose, and the apical part waved with slender black streaks, towards the inner margin before the middle is an obscure black dot, and a larger red-brown one towards the anal angle, but nearly obsolete; hind wings brown and shining. Taken in August and September, at the skirts of woods.

[v] SYNONYME.—*Pyralis maculana*, Fabricius; Haworth; Stephens; Wood, fig. 1032.

SPECIES 7.—PŒCILOCHROMA MAURANA[w].—(Plate XC., Fig. 13.)—Measures about an inch in expanse; fore wings dirty-straw coloured, or pale brownish-ash, the costa obsoletely dotted with brown, the base broadly brown, slightly waved outwards, and with another very broad brown fascia across the middle, extending to the anal angle, dilated behind, and with the margins irregularly waved, on the apical margin several minute brown dots; hind wings brown. Taken in Sussex and Hampshire, but very rare.

[w] SYNONYME.—*Tortrix maurana*, Hübner; Haworth; Stephens; Wood, fig. 1033.

SPECIES 8.—PŒCILOCHROMA SORDIDANA[x].—Measures 8 lines in expanse; fore wings liver-brown, with obscure spots, a pale yellowish spot on the inner margin, in which are some brown streaks, and a subapical dark brown spot.

[x] SYNONYME.—*Tinea sordidana*, Hübner; Curtis's Guide; Stephens, Ill. H., App. 4, p. 397.

PTYCHOLOMA, STEPHENS.

The palpi are very short, scarcely visible from above, and clothed with short scales, not concealing the terminal joint; the antennæ rather short, the head slightly tufted in front; the fore wings in the males are remarkable for having the fore margin thickened; the disk in both sexes dark tawny, with more or less distinct golden or silvery stripes or markings.

SPECIES 1.—PTYCHOLOMA LECHEANA[y].—(Plate XC., Fig. 14.)—Measures from 7 to 10 lines in expanse; fore wings dark brown, more or less varied with fulvous scales, especially towards the base, and marked with two tarnished silvery marks, like the Greek letters ΙΓ; these marks are, however, more or less obsolete, especially in the females. Some individuals of small size have the fore wings dark olive, with the silvery marks very conspicuous. Taken in woods, at the end of June.

[y] SYNONYME.—*Phalæna Tortrix Lecheana*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 1034.

SPECIES 2.—PTYCHOLOMA OBSOLETANA[z].—(Plate XC., Fig. 15.)—Measures 8 lines in expanse; wings dull black, the fore ones with numerous irregularly-dispersed silvery dots, some of which are disposed in streaks; fringe of fore wings silvery, of hind ones deep black. Taken at Birchwood, in June, but very rare.

[z] SYNONYME.—*Ptycholoma obsoletana*, Stephens; Wood, fig. 1035.

DESCRIPTION OF PLATE XCI.

INSECTS.—Fig. 1. Euchromia purpurana (the purple).
„ Fig. 2. Euchromia fulvipunctana (the tawny dotted).
„ Fig. 3. Euchromia ericetana (dark var.) 4. Light variety.
„ Fig. 5. Lophoderus ministranus (the yellow-barred iron
„ Fig. 6. Lophoderus subfascianus (the pale-barred iron).
„ Fig. 7. Sarrothripus degeneranus. 8. Caterpillar. 9. Cocoon. 10. Chrysalis (the large marbled).
„ Fig. 11. Sarrothripus undulanus (the waved-marbled).
„ Fig. 12. Sarrothripus dilutanus (the large brown).
INSECTS.—Fig. 13. Sarrothripus Lathamianus (the Lathamian).
„ Fig. 14. Sarrothripus Ilicanus (the large Holly).
„ Fig. 15. Sarrothripus Afzelianus (the Afzelian).
„ Fig. 16. Sarrothripus ramosanus (the twigged bar).
„ Fig. 17. Sarrothripus Stonanus (Mr. Stone's bar).

The insects figured in this plate are, with the exception of Fulvipunctana from "Wood," all from the cabinet of Mr. Bentley; the Caterpillar, Chrysalis, and Cocoon are from Hübner. H. N. H.

EUCHROMIA, STEPHENS. ORTHOTÆNIA, PARS CURTIS.

The palpi are robust, subclavate, and porrected, with long scales, nearly concealing the terminal joint; the antennæ are short and rather stout; the head slightly tufted in front; the fore wings with the costal margin nearly straight, and the apical one slightly rounded; they are destitute of fasciæ and markings, except a few slight ones on the costa.

SPECIES 1.—EUCHROMIA PURPURANA[a].—(Plate XCI., Fig. 1.)—Measures 8 or 9 lines in expanse; fore wings, including the fringe, purple, which is brighter beyond the middle of the wings, but soon fades; the costa pale, with purple dots; hind wings brown, with purplish fringe. Taken in Norfolk and the New Forest, in June.

[a] SYNONYME.—*Tortrix purpurana*, Haworth; Stephens; Wood, fig. 1036 (from a faded specimen).

SPECIES 2.—EUCHROMIA FULVIPUNCTANA[b].—(Plate XCI., Fig. 2.)—Measures about 8 lines in expanse; fore wings obscure reddish-brown, towards the extremity marked with very indistinct dark or tawny-red dots, which are more or less obliterated, some of which are, however, rather more conspicuous, and form an oblique streak beyond the middle of the wing; hind wings brown, with whitish fringe. Taken in Norfolk and near London, but rare.

[b] SYNONYME.—*Tortrix fulvipunctana*, Haworth; Stephens; Wood, fig. 1037.

SPECIES 3.—EUCHROMIA ERICETANA[c].—(Plate XCI., Figs. 3, 4.)—This new species measures about 7 lines in expanse; fore wings ashy, with a purple or rosy tinge, and thickly irrorated with minute red markings, which become irregularly confluent across the middle of the wings, forming also a patch near the anal angle, and another running transversely from the middle of the apical margin towards the costa; apical margin with a red marginal streak; fringe pale, with a slight rosy tinge; hind wings dull pale brown. In the collection of Mr. Bentley, from the north of England, also taken at Shanklin, Isle of Wight, in the middle of July.

[c] SYNONYME.—*Euchromia ericetana*, Bentley's MSS.

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LOPHODERUS, STEPHENS.

The palpi are slender and porrected, with the terminal joint distinct; the antennæ short, with the joints slightly serrated and setose beneath in the males, the head tufted, the thorax also crested behind; the fore wings are rounded along the costa, the disk destitute of fascia, but with a smooth, raised, pale patch at the extremity of the discoidal cell.

SPECIES 1.—LOPHODERUS MINISTRANUS[d].—(Plate XCL., Fig. 5.)—Measures 9 or 10 lines in expanse; fore wings rusty red-brown, with the costa at the base, and a broad ill-defined bar towards the extremity of yellowish-buff; on the disk is a raised whitish dot, and opposite to it, on the apical margin, the tawny-red forms a slight angle; occasionally the wings are destitute of the yellowish colour; hind wings brown, with pale fringe. Taken near Dover, Portsmouth, and elsewhere, sometimes abundantly.

[d] SYNONYMES.—*Phalæna Tortrix ministrana*, Linnæus; Donovan, 12, pl. 380, fig 2; Haworth; Stephens; Wood, fig. 1038.
Tortrix ferrugana, Hübner.

SPECIES 2.—LOPHODERUS SUBFASCIANUS[e].—(Plate XCI., Fig. 6.)—Measures 8 lines in expanse; fore wings brownish, rusty, with a paler bar across them towards the base, with the edges angulated, and another very indistinct and abbreviated one beyond the middle; hind wings pale brown, with dark veins; fringe dusky-ash. Taken in the New Forest, in June. (Proved to be a family of the preceding, having been taken paired therewith, and a continuous series of variety between the two having occurred.)

[e] SYNONYME.—*Lophoderus subfascianus*, Stephens; Wood, fig. 1039.

SARROTHRIPUS, CURTIS. T. PALPANÆ, HAWORTH. AXIA, HÜBNER.

These insects are conspicuous for their large size; their fore wings rounded at the base of the costa, the disk having a few raised scales; the palpi are long, slender and porrected in front of the head, like a beak, and the fore legs are furnished with a long brush of hair on the femora and tibiæ. Mr. Haworth long ago remarked that it is possible that nearly all the articles of this Section may form but one species, of which, however, there was no satisfactory proof; and Treitschke has united them all into one species, Penthena revoyana. The species are generally found in the autumn. The caterpillars are setose, and they form a boat-shaped cocoon.

SPECIES 1.—SARROTHRIPUS DEGENERANUS[f].—(Plate XCI., Figs. 7, 8, 9, 10.)—Measures 1 inch in expanse; fore wings shining, hoary, and clouded with brown, with numerous obsolete, undulated strigæ, and elevated brown spots, and a larger fulvous one in the place of the anterior stigma of the Noctuidæ, and a row of subapical brown dots; hind wings pale brown. Found from July to December, in woods and forests in the south of England.

[f] SYNONYMES.—*Tortrix degeneranus*, Hübner; Haworth; Stephens; Wood, fig. 1340.
Phalæna Tortrix bifasciana, Donovan, 10, pl. 357, fig. 3.

SPECIES 2.—SARROTHRIPUS UNDULANUS[g].—(Plate XCI., Fig. 11.)—Measures 10 or 11 lines in expanse; fore wings hoary, with a shining gloss, and some obscure brown dots, and two slender-waved brown streaks, one before, and the other beyond the middle, both duplicated, and having between them a fulvous dot and a subapical row of brown dots; hind wings pale brown. Taken in the same localities as the preceding, of which it may be a variety of the male.

[g] SYNONYME.—*Tortrix undulanus*, Hübner; Stephens; Wood, fig. 1041.

SPECIES 3.—SARROTHRIPUS DILUTANUS[h].—(Plate XCI., Fig. 12.)—Measures 11 or 12 lines in expanse; fore wings pale ashy-grey, with a small costal spot at the base; another, thrice as large, and longer, in the middle of the costal margin, of red, at the bottom of which is a spot in the place of the anterior stigma of the Noctuidæ; between this dot and the apical margin is an obsolete dentated striga of black dots, and on the margin itself a row of minute black dots; hind wings pale brown. Taken in the woods of Kent and Surrey, and also in Norfolk, in August.

[h] SYNONYME.—*Tortrix dilutana*, Hübner; Haworth; Stephens; Wood, fig. 1043.

SPECIES 4.—SARROTHRIPUS LATHAMIANUS[i].—(Plate XCI., Fig. 13.)—Measures 10½ lines in expanse; fore wings pale testaceous, with the base and apex marked with several elevated black spots, and a squamose, elevated, ferruginous spot in the middle; head and palpi above snow-white. Taken in the Kentish woods, in August.

[i] SYNONYMES.—*Phalæna Tortrix Lathamiana*, Gmelin; Stewart; Haworth; Stephens; Wood, fig. 1042.
Phalæna Tortrix Ilicana, Donovan, 10, pl. 357, fig. 2 (but not of Fabricius).

SPECIES 5.—SARROTHRIPUS ILICANUS[j].—(Plate XCI., Fig. 14.)—Measures from 9 to 11 lines in expanse; fore wings brown, or ashy-brown and glossy, and slightly waved, especially towards the base; before the middle are two approximating brown spots, followed by a single central black dot; towards the anal angle are also two or three approximating brown dots, and the apical margin itself has a row of minute brown spots; the hind wings are ashy. Taken in the woods of the south of England, about the beginning of August.

[j] SYNONYMES.—*Pyralis Ilicanus*, Fabricius; Haworth; Stewart; Stephens; Wood, fig. 1044.
Tortrix punctulanus, Hübner.

SPECIES 6.—SARROTHRIPUS AFZELIANUS[k].—(Plate XCI., Fig. 15.)—Measures from 9 to 11 lines; fore wings testaceous, brown and glossy, with a black fascia at the base, a trigonate black patch in the middle of the costa, and also with a few elevated black dots on the disk. Found in woods; occurring sometimes in March, and also probably through the autumn and winter.

SYNONYME.—*Phal. Tortrix Afzeliana*, Gmelin; Stewart; Haworth; Stephens; Wood, fig. 1045.

SPECIES 7.—SARROTHRIPUS RAMOSANUS[l].—(Plate XCI., Fig. 16.)—Measures 9 or 10 lines in expanse; fore wings brunneous, inclining to chestnut, with a dark longitudinal black line down the centre, branched at the base and on its inferior margin, above which, towards the centre, is a black spot; near the apical margin is a row of ocellated dots, the anterior ones being more or less obsolete, and another row of dots along the margin itself. Taken in the Kentish woods, in July; but very rare.

[l] SYNONYME.—*Tortrix ramosana*, Hübner; Curtis, Brit. Ent., pl. 29; Stephens; Wood, fig. 1046.

SPECIES 8.—SARROTHRIPUS STONANUS[m].—(Plate XCI., Fig. 17.)—Closely allied to the preceding, but rather larger, with the branches of the longitudinal black stripe longer, and the disk with a waved brown streak. Also taken at Birchwood.

[m] SYNONYME.—*Sarrothripus Stonanus*, Curtis's MSS.
Sarrothripus ramosanus, var., Stephens's Ill. Brit. Ent.

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DESCRIPTION OF PLATE XCII.

INSECTS.—Fig. 1. Peronea profanana (the rusty button).
„ Fig. 2. Peronea semiustana (the half-scorched).
„ Fig. 3. Peronea striana (the brown button).
„ Fig. 4. Peronea substriana (the striped button).
„ Fig. 5. Peronea Bentleyana (Bentley's button).
„ Fig 6. Peronea vittana (the streaked button).
„ Fig. 7. Peronea spadiceana (the bay-shouldered button).
„ Fig. 8. Peronea brunneana (the brown button).
„ Fig. 9. Peronea Desfontainana (the Desfontainian).
INSECTS.—Fig. 10. Peronea consimilana (the pale bay button).
„ Fig. 11. Peronea fulvocristana (the tawny crested button).
„ Fig. 12. Peronea albovittana (the white streaked button).
„ Fig. 13. Peronea fulvovittana (the tawny streaked button).
„ Fig. 14. Peronea cristalana (the barred button).

The whole of the insects figured in this plate are from specimens in the cabinet of Mr. Bentley. The plant is Anagallis arvensis, common Pimpernel. H. N. H.

PERONEA, CURTIS. ASPERANÆ, HAWORTH.

The palpi are elongated, deflexed, and thickly squamose, compressed, and with the middle dilated above, the antennæ are rather thickest in the middle, and subserrated beneath; the fore wings rounded at the base of the costa, with the tip slightly hooked, and the disk with elevated tufts of scales, one of which is often more conspicuous than the rest, and forms a large central button; the fore tibiæ and femora are not furnished with a brush beneath, and the thorax is slightly crested behind. The species are rare, and either very numerous, or excessively variable. By those, however, who, from the extent of their collections, seem the best able to judge of the question, the number of species is admitted, and indeed still acquires augmentation. They are chiefly found in the autumn, frequenting trees covered with lichens and mosses. [From a paper by Mr. Desvignes on this genus, published in the "Zoologist," and numerous other investigations, as well as from the capture of vast numbers of specimens, it has been clearly proved that the greater number of the presumed species described by Stephens, and in the following pages, are only varieties of a few very variable species; the modifications in the nomenclature required thereby will be found in the Synopsis of species at the end of the present edition.]

SPECIES 1.—PERONEA PROFANANA[n].—(Plate XCII., Fig. 1.)—Measures about $\frac{3}{4}$ of an inch in expanse; fore wings ferruginous-grey, the costal margin, with the base, middle, and apex, ustulated brown; a little before the middle is an elevated discoidal patch of ustulated brown scales, in addition to which are several minute, contiguous, rugose dots, and another, rather more distinct, at the apex; hind wings and thorax brown. Taken in the woods of Kent and Surrey, and in the New Forest, in September.

[n] SYNONYME.—*Pyralis profanana*, Fabricius; Haworth; Donovan, 12, pl. 377, fig. 3; Stephens; Wood, fig. 1047.

SPECIES 2.—PERONEA SEMIUSTANA.—(Plate XCII., Fig. 2.)—Measures 10 lines in expanse; fore wings with the entire base, and also the costa (nearly to the extremity), of a leaden-black colour: the posterior and apical half of the wing being of a reddish-brown, varied with small darker patches, and with a large black tuft of scales in the middle of the disk, and several smaller elevated black scales towards the base and anal angle, the latter forming a curved line of spots parallel with the apical margin; tip of the wing also with a leaden-coloured pointed patch; towards the base of the costa, in some specimens, is an indistinct, oblique, grey fascia; hind wings pale brown; head, palpi, and thorax dirty white. Taken in the New Forest, and elsewhere, by Mr. Bentley.

SPECIES 3.—PERONEA STRIANA[o].—(Plate XCII., Fig. 3.)—Measures 9 or 10 lines in expanse; fore wings dark brown, with two minute snow-white dots on the costa near the tips; and another large central discoidal brown tuft, with several other minute, subapical, elevated, brown dots; within the inner margin runs a broad ashy striga; the head and palpi snowy-white. Taken in woods in July, but rather uncommon.

[o] SYNONYME.—*Tortrix striana*, Haworth; Stephens; Wood, fig. 1045.

SPECIES 4.—PERONEA SUBSTRIANA[p].—(Plate XCII., Fig. 4.)—Measures rather more than $\frac{3}{4}$ of an inch in expanse; fore wings dark greyish-brown, not clouded, with a large black tuft in the middle, whence extends a rusty dash towards the costa obliquely; and an obsolete ashy streak within the inner margin; thorax brown; head and palpi ashy. Taken at Birch Wood and in the New Forest, in August.

[p] SYNONYME.—*Peronea substriana*, Stephens; Wood, fig. 1049.

SPECIES 5.—PERONEA BENTLEYANA.—(Plate XCII., Fig. 5.)—Measures 10 lines in expanse; fore wings with the base and costa (extending nearly to the tip) of a leaden-brown, the apical portion pale brown, mottled with small darker patches; inner margin with a rather narrow luteous patch; disk of the wing with a large blackish tuft of elevated scales, and also with smaller patches towards the base and anal angle; the costal portion of the wing slightly marked before the middle with very indistinct, grey, oblique fasciæ, and the apical margin with a slender dusky streak, the apical angle of the wing also dark; hind wings pale whitish-brown; head, thorax, and palpi very pale buff. Taken by Mr. Bentley, in the New Forest.

SPECIES 6.—PERONEA VITTANA[q].—(Plate XCII., Fig. 6.)—Measures about ¾ of an inch in expanse; fore wings brunneous, darker beyond the middle, with a raised tuft of black scales in the centre, whence extends a reddish dash obliquely towards the apex; within the inner margin is a broad ochre-red streak, and near the anal angle are several dark dots; head and palpi ochre-red. Taken near London, and in the New Forest.

[q] SYNONYME.—*Peronea Vittana*, Stephens; Wood, fig. 1051.

SPECIES 7.—PERONEA SPADICEANA[r].—(Plate XCII., Fig. 7.)—Measures 9 or 10 lines in expanse; fore wings with the base bright bay colour, and the apex dark brown, the two colours separated obliquely nearly from the base of the inner margin to the extremity of the costa, passing near the middle through a black-brown patch of scales, and with a few dark scales near the anal angle; head and palpi ashy. Taken in the same locality as the last species, in the autumn.

[r] SYNONYME.—*Tortrix spadiceana*, Haworth; Stephens; Wood, fig. 1052.

SPECIES 8.—PERONEA BRUNNEANA[s].—(Plate XCII., Fig. 8.)—Measures 9 or 10 lines in expanse; fore wings pale reddish-brown at the base, the apical half darker brown, the colours separated obliquely from the large black central tuft of elevated scales; near the anal margin are also a few dark dots and a faint ashy streak within the inner margin; head and palpi ashy. Taken in the same localities as the preceding, in the autumn.

[s] SYNONYME.—*Peronea brunneana*, Stephens; Wood, fig. 1050.

SPECIES 9.—PERONEA DESFONTAINANA[t].—(Plate XCII., Fig. 9.)—Measures 9 or 10 lines in expanse; fore wings brownish, darkest along the scabrous costa, the base very much rounded, and the middle slightly emarginate; a broad fulvous-golden vitta extends from the base to the middle of the wing, and is terminated by a large, elevated, fulvous fascicle of scales; another very slender streak extends to the anal angle; hind wings whitish; head and palpi pale. Taken with the preceding.

[t] SYNONYMES.—*Pyralis Desfontainana*, Fabricius; Haworth; Stephens; Wood, fig. 1054.
Tortrix sericeana, Hübner.

SPECIES 10.—PERONEA CONSIMILANA[u].—(Plate XCII., Fig. 10.)—Measures rather more than ¾ of an inch in expanse; fore wings brunneous-brown, from the base to the middle runs a tawny-orange dash terminated by a fascicle of scales of rather darker colour, and two or three nearly obsolete dots near the anal angle; the inner margin with an obscure ashy streak; the thorax, head, and palpi white. Taken with the preceding, but not common.

[u] SYNONYME.—*Peronea consimilana*, Stephens; Wood, fig. 1053.

SPECIES 11.—PERONEA FULVOCRISTANA[v].—(Plate XCII., Fig. 11.)—Measures about ¾ an inch in expanse; fore wings with the costa and apical margin dark brown; the basal portion with a broad orange-brown dash,

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and the inner margin with a broad ochraceous vitta, and a central fulvous fascicle of elevated scales; the thorax, head, and palpi ochreous. Found in the New Forest, in the autumn.

[v] Synonyme.—*Peronea fulvocristana*, Stephens; Wood, fig. 1055.

Species 12.—Peronea albovittana[w].—(Plate XCII., Fig. 12.)—Measures 9 lines in expanse; fore wings with the front half dark orange (darkest on the costa), and the hind half dark brown; the two colours separated obliquely from near the base of the inner margin, nearly to the apex, having a golden tuft of scales in the middle, and a brownish white stripe along the inner margin; thorax, head, and palpi white. Taken in the New Forest in August, but very rare.

[w] Synonyme.—*Peronea albovittana*, Stephens, Ill. H., pl. 36, fig. 2; Wood, fig. 1056.

Species 13.—Peronea fulvovittana[x].—(Plate XCII., Fig 13.)—Measures 8½ or 9 lines in expanse; fore wings brown, and varied with darker clouds; towards the base is a dusky patch followed by a whitish incurved but abbreviated fascia broadest on the costa, from the outer edge of which runs a curved whitish streak nearly to the extremity of the costa, enclosing a dusky costal patch; the discoidal tuft of scales is whitish-fulvous; on the inner margin is a broad bright fulvous streak; the front of the body is ashy coloured. Taken in Kent and Hampshire, in the autumn.

[x] Synonymes.—*Peronea fulvovittana*, Stephens. *Peronea cristalana*, Wood, fig. 1058.

Species 14.—Peronea cristalana[y].—(Plate XCII., Fig. 14.)—Nearly allied to the last species; measures 9 or 10 lines in expanse; fore wings brown, clouded with black; near the base is an irregular whitish fascia, which is incurved towards the base of the inner margin, and also sends off an oblique branch to the apex of the costa, enclosing a dusky dorsal patch; the discoidal tuft of scales is pale brown, as well as the inner margin of the wing; near the anal angle is a dark brown cloud. Taken in the woods of Kent, Surrey, and Hampshire, in the autumn.

[y] Synonymes.—*Phalæna Tortrix cristalana*, Donovan, 3, pl. 77, figs. 1, 2; Stephens.
Peronea fulvovittana, Wood, fig. 1057.

DESCRIPTION OF PLATE XCIII.

Insects.—Fig. 1. Peronea subcristalana (the dull button).
„ Fig. 2. Peronea cristana (the white button).
„ Fig. 3. Peronea albipunctana (the white spotted button).
„ Fig. 4. Peronea Chantana (Chant's button).
„ Fig. 5. Peronea subvittana (the obscure streaked button).
„ Fig. 6. Peronea insulana (the insulated button).
„ Fig. 7. Peronea divisana (the half-coloured button).
„ Fig. 8. Peronea strigana (the streaked buff-edged).
„ Fig. 9. Peronea radiana (the buff-edged).
Insects.—Fig. 10. Peronea centrovittana (the centre streaked button).
„ Fig. 11. Peronea ramostriana (the branched button).
„ Fig. 12. Peronea combustana (the flame button).
„ Fig. 13. Peronea albistriana (the grey streak).
Plant.—Fig. 14. Lysimachia nemorum (wood loosestrife).

The whole of the insects in the plate are figured from specimens in the cabinet of Mr. Bentley. H. N. H.

Species 15.—Peronea subcristalana.—(Plate XCIII., Fig. 1.)—Measures 10 lines in expanse; fore wings pale brown; costa towards the base marked with a rather broad, abbreviated, chestnut-brown fascia, suddenly bent back towards the base of the wing, and with a small patch of dark elevated scales toward the inner margin near the base; middle of the disk with a patch of elevated blackish scales, in front of which is a long, semi-oval, paler patch, enclosing a slightly darker smaller patch on the costa itself; tip of the wing with a leaden-brown patch, from which runs a subapical row of elevated dark scales, nearly to the anal angle; hind wings pale brown; head, palpi, and thorax dirty white. Taken in the New Forest, by Mr. Bentley.

SPECIES 16.—PERONEA CRISTANA[z].—(Plate XCIII., Fig. 2.)—Measures 8½ to 10 lines in expanse; head, thorax, and palpi snow-white; fore wings dark brown, with an elevated tuft of white scales, and a broad white bar along the inner margin; adjoining the apical margin of the fore wings, especially towards the anal angle, are also a few minute, elevated, transverse, white scales; hind wings brownish. Taken in the woods in the south of England, in the autumn.

[z] SYNONYME.—*Pyralis cristana*, Fabricius; Hübner; Haworth; Stephens; Wood, fig. 1060.

SPECIES 17.—PERONEA ALBIPUNCTANA[a].—(Plate XCIII., Fig. 3.)—Measures 9 lines in expanse; head, thorax, and palpi snow-white; hind wings dark brown, with a central tuft of snow-white elevated scales and a few white scales near the anal angle; inner margin of the fore wings with a broad ochre-white dash; hind wings brownish. Taken in the New Forest.

[a] SYNONYME.—*Peronea albipunctana*, Haworth, MSS.; Stephens; Wood, fig. 1061.

SPECIES 18.—PERONEA CHANTANA.—(Plate XCIII., Fig. 4.)—Measures 8 lines in expanse; fore wings with the base and costa, extending nearly to the tip of the wing, of a red-brown colour, the inner margin with a broad attenuated streak of snow-white along the inner margin, and the disk with a patch of white scales, the remaining apical portion of the wing of a liver-brown, with a straight subapical row of elevated scales; hind wings brownish; head and thorax snow-white. Taken in the New Forest, by Mr. Bentley.

SPECIES 19.—PERONEA SUBVITTANA[b].—(Plate XCIII., Fig. 5.)—Measures 10½ lines in expanse; head, thorax, and palpi obscure white; fore wings dark brown, with a central tuft of snow-white scales, and a short streak of the same colour at the base of the inner margin of the fore wings; hind wings pale brown. Taken in the New Forest, in August.

[b] SYNONYME.—*Peronea subvittana*, Stephens, Illustr.

SPECIES 20.—PERONEA INSULANA.—(Plate XCIII., Fig. 6.)—Measures 9½ lines in expanse; fore wings liver-brown, with a large tuft of snow-white scales in the middle of the disk, and a few slight, elevated, dark scales towards the anal angle, the inner margin with a dirty white dash, in which is an indistinct, short, dusky vitta; hind wings pale liver-brown; head, palpi, and thorax snow-white. Taken in the New Forest, by Mr. Bentley, in the autumn.

SPECIES 21.—PERONEA DIVISANA[c].—(Plate XCIII., Fig. 7.)—Measures 10 or 11 lines in expanse; head, thorax, and palpi brownish; fore wings reddish-brown, with a broad, straight, blackish bar extending from the base of the inner margin to the apical angle of the wing, and shaded off on the hind margin to the ground-colour of the wing, and bounded on its fore margin by a white streak, which is gradually shaded off to the costa, which is red-brown; hind wings pale brown. Taken in the New Forest and in Kent, in the autumn, but rare.

[c] SYNONYME.—*Tortrix divisana*, Hübner; Stephens, Illustr., pl. 34, fig. 1; Wood, fig. 1064.

SPECIES 22.—PERONEA RADIANA[d].—(Plate XCIII., Figs. 8, 9.)—Measures about 10 lines in expanse; fore wings pale brownish-buff, the costa broadly lighter coloured, a slender brown streak extending from the base to the apex of the fore wings, emitting various radiating streaks, extending to the apical margin, and running from the base of the wings, where they become confluent; hind wings pale brown. P. strigana of the "Catalogue"

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has been subsequently considered by its author as a variety of the preceding, having the broad pale costa faintly streaked with brown. Taken in the New Forest and Coombe Wood, in September.

[d] SYNONYMES.—*Tortrix radiana*, Hübner; Haworth; Stephens; Wood, fig. 1065.
Peronea strigana, Stephens's Catal.; *P. radiana*, var. Stephens's Illustr.

SPECIES 23.—PERONEA CENTROVITTANA[e].—(Plate XCIII., Fig. 10.)—Measures 9 or 10 lines in expanse; fore wings testaceous or leaden-brown, with a fulvous or testaceous-grey streak, extending from the base to the apical margin of the fore wings, from which diverge various brown streaks, running obliquely to the costa on one side, where they are dilated, and on the other to the hinder and apical margin of the wing; the ground-colour of the wings is sometimes clouded or varied with greyish oblique clouds; hind wings pale brown; head and thorax brown. Taken in July and August, in various places in the south of England.

[e] SYNONYME.—*Peronea centrovittana*, Haworth, MSS.; Stephens; Wood, fig. 1067.

SPECIES 24.—PERONEA RAMOSTRIANA[f].—(Plate XCIII., Fig. 11.)—Measures 9 or 10 lines in expanse; fore wings brown, shining, with a central pale streak (more or less obscure), whence numerous dark streaks radiate; hind wings whitish-brown; thorax and head whitish. Taken in the New Forest, in the autumn.

[f] SYNONYME.—*Peronea ramostriana*, Stephens, Ill.; Wood, fig. 1066.

SPECIES 25.—PERONEA COMBUSTANA[g].—(Plate XCIII., Fig. 12.)—Measures 9 or 10 lines in expanse; fore wings ustulated brown, occasionally varied with an oblique, pale, central cloud, with a pale but obscure streak, from the base to the apical angle, the inner margin more or less broadly ochreous-white (as is also the hind part of the thorax), the apical portion of the wing also marked with very obscure darker streaks; hind wings whitish-brown. Taken in the New Forest and elsewhere, in August.

[g] SYNONYME.—*Tortrix combustana*, Hübner; Stephens; Wood, fig. 1068.

SPECIES 26.—PERONEA ALBISTRIANA[h].—(Plate XCIII., Fig. 13.)—Measures 9 or 10 lines in expanse; fore wings brown, with a slight tinge of purple, the costal portion roughly ciliated with small dark dots, the inner margin with an ashy streak, variable in its breadth; hind wings pale brownish. Taken in the New Forest and elsewhere, in the autumn.

[h] SYNONYME.—*Tortrix albistriana*, Haworth; Stephens; Wood, fig. 1069.

DESCRIPTION OF PLATE XCIV.

INSECTS.—Fig. 1. Peronea autumnana (the autumnal button).
„ Fig. 2. Peronea ruficostana (the red-edged button).
„ Fig. 3. Peronea alboflammana (the white dash).
„ Fig. 4. Peronea coronana (the marbled chestnut).
„ Fig. 5. Peronea Byringerana (the Byringerian).
„ Fig. 6. Peronea umbrana (the dark-streaked button).
„ Fig. 7. Peronea Leucophæana (the black dash).
„ Fig. 8. Peronea subcristana (the half crested button).
„ Fig. 9. Peronea marmorana (the silver grey).
INSECTS.—Fig. 10. Peronea latifasciana (the broad-barred).
„ Fig. 11. Peronea favillaceana (the ash-coloured).
„ Fig. 12. Peronea reticulana (the chequered grey).
„ Fig. 13. Peronea tristana (the lesser ash-coloured).
PLANT. — Fig. 14. Primula farinosa (Bird's eye Primrose).

The whole of the insects figured in this plate are from the cabinet of Mr. Bentley, with the exception of P. latifasciana, kindly sent by Mr. Robert Cook, of York. H. N. H.

SPECIES 27.—PERONEA AUTUMNANA[i].—(Plate XCIV., Fig. 10.)—Measures 9 or 10 lines in expanse; fore wings pale testaceous brown, and shining, with a few small, dark, elevated scales, the base of the wings with an oblique, more or less obsolete fascia, and a large patch of darker brown on the middle of the costa, more or less distinct; hind wings pale brownish. Taken in the New Forest and elsewhere, in the autumn.

[i] SYNONYME.—*Tortrix autumnana*, Hübner; Stephens; Wood, fig. 1070.

SPECIES 28.—PERONEA RUFICOSTANA[j].—(Plate XCIV., Fig. 2.)—Measures 9 or 10 lines in expanse; fore wings dull violaceous, the apical portion greyish, a mark of chestnut, edged with blackish on the front edge, extending from the base nearly to the tip of the wings, with a minute tuft of bright ferruginous or fulvous scales in the centre, and an interrupted subapical row of dusky spots; inner margin yellowish-white; head, thorax, and palpi white. Taken in the New Forest, in the autumnal months.

[j] SYNONYME.—*Peronea ruficostana*, Curtis, Brit. Ent., pl. 16; Stephens; Wood, fig. 1062.

SPECIES 29.—PERONEA ALBOFLAMMANA.—(Plate XCIV., Fig. 3.)—Measures 9 lines in expanse; fore wings dark liver-brown, with a small tuft of dark scales in the middle of the disk, and a few smaller ones scattered towards the anal angle; inner margin of the wing with a broad attenuated bar of snow-white; head, thorax, and palpi also snow-white. Taken in the New Forest, in the autumn.

SPECIES 30.—PERONEA CORONANA[k].—(Plate XCIV., Fig. 4.)—Measures 10 lines in expanse; fore wings brunneous, with an irregularly-twisted snow-white bar (sometimes very obscure) at the base, and another next the anal angle, connected with the former by an oblique pale streak of the same colour, the costa of the fore wings scabrous and much rounded, and the inner margin sometimes with a whitish streak; hind wings whitish. Taken at Coombe Wood and in the New Forest, in the autumn.

[k] SYNONYMES.—*Tortrix coronana*, Thunberg; Stephens; Wood, fig. 1072.
Tortrix eximiana, Haworth; Curtis.

SPECIES 31.—PERONEA BYRINGERANA[l].—(Plate XCIV., Fig. 5.)—Measures 9 or 10 lines in expanse; fore wings brunneous, varying in the depth of tint, with a few dark elevated scales on the disk, and a broad, oblique, pale ashy bar at the base, dilated behind, and united by a broad patch to a curved ashy-white mark near the apical margin, this marking varying in intensity, the costal portion also with several oblique dark lineolæ, dilated at the costal margin; hind wings ashy-brown. Taken in Kent and the New Forest, in the autumn.

[l] SYNONYME.—*Tortrix Byringerana*, Hübner; Stephens; Wood, fig. 1073.

SPECIES 32.—PERONEA UMBRANA[m].—(Plate XCIV., Fig. 6.)—Measures from 8 to 10 lines in expanse; fore wings greyish-red, more or less clouded or varied with brown shades and shiny, with a dusky irregular streak from the base to the apical angle, the pale brown markings occasionally forming obscure oblique fasciæ on the costal portion of the wing, the middle of the wing with a slightly elevated black patch of scales. Taken in the New Forest and Surrey, in the autumn.

[m] SYNONYME.— *Tortrix umbrana*, Hübner; Haworth; Stephens; Wood, fig. 1063.

SPECIES 33.—PERONEA LEUCOPHÆANA.—(Plate XCIV., Fig. 7.)—Measures 11 lines in expanse; fore wings of a leaden-coloured brown, with a black streak, dilated at the base, extending from the base to the middle of the disk of the wing, where is also another short black dash, the adjoining space being of a reddish tinge; hind wings pale silvery-brown; head and thorax liver-brown. Taken in Nottinghamshire by Mr. Desvignes, but very rare.

SPECIES 34.—PERONEA SUBCRISTANA[n].—(Plate XCIV., Fig. 8.)—Measures about 10 lines in expanse; fore wings dark glossy brown, varied with deeper clouds, especially on the costa, which is marked with a dusky blotch, and several dark dots beyond the middle, emitting slender oblique dark lines; middle of the wing with a

minute tuft of elevated dark scales, and a few others dispersed on the inner part of the wing, and towards the anal angle; head, thorax, and palpi whitish; hind wings pale brown. Taken in the New Forest and elsewhere, in the autumn.

[n] SYNONYME.—*Peronea subcristana*, Stephens; Wood, fig. 1071.

SPECIES 35.—PERONEA MARMORANA.—(Plate XCIV., Fig. 9.)—Measures 10½ lines in expanse; the fore wings of this extremely distinct species are of a silvery-grey, slightly but entirely marbled or freckled with brown scales, base of the wing darker brown; a narrow, dark, oblique fascia runs from the costa before the middle halfway across the disk, where it becomes blended with the general colour of the wing, and another, much shorter and parallel, runs from the costa beyond the middle of the wing, emitting several small dusky rays towards the tip of the wing; hind wings pale silvery-brown; head, thorax, and body dark brown. Taken by Mr. Bentley in Epping Forest, in October, 1824.

SPECIES 36.—PERONEA LATIFASCIANA[o].—(Plate XCIV., Fig. 10.)—Measures 8 lines in expanse; fore wings ashy or hoary, with a truncated, triangular, dark brown patch at the base, and a very broad, oblique, dark brown fascia a little beyond the middle directed anteriorly, and which extends nearly to the apical margin, which is hoary; hind wings pale brown. Taken near London, and in Yorkshire, in the autumn.

[o] SYNONYME.—*Tortrix latifasciana*, Haworth; Stephens; Wood, fig. 1081.

SPECIES 37.—PERONEA FAVILLACEANA[p].—(Plate XCIV., Fig. 11.)—Measures 10 or 11 lines in expanse; wings pale ashy, or hoary, shining, with a few elevated darker scales on the disk near the base and apical margin; a slender, oblique, dusky fascia near the base; the middle of the wing with a large, irregular, abbreviated, somewhat triangular, darker patch, variable in its tint from dusky to purplish-brown, and ferruginous on the costa; and a few irregular, dusky, small spots nesr the apical margin. Taken near London, in the New Forest, and elsewhere, in the autumn.

[p] SYNONYME.—*Tortrix favillaceana*, Hübner; Haworth; Stephens; Wood, fig. 1075.

SPECIES 38.—PERONEA RETICULANA[q].—(Plate XCIV., Fig. 12.)—Measures 9 or 10 lines in expanse; fore wings pale ash, or ash colour, and shining, obsoletely reticulated with brown; the costa marked with irregular, obsolete, brownish spots; the disk obliquely marked with dusky fasciæ; hind wings whitish-brown. Taken in company with P. favillaceana.

[q] SYNONYME.—*Tortrix reticulana*, Haworth; Stephens; Wood, fig. 1077.

SPECIES 39.—PERONEA TRISTANA[r].—(Plate XCIV., Fig. 13.)—Measures 8 or 9 lines in expanse; fore wings pale ashy, or hoary, slightly rough, with very obsolete elevated dots, with a slight, oblique, basal fascia, and a triangular, pale brown, irregular patch arising on the middle of the costa; hind wings brownish-white. Supposed to be a variety of P. favillaceana (in company with which it is taken) by Mr. Haworth, but smaller, and with the costal spot pale brown; not ferruginous.

[r] SYNONYME.—*Tortrix tristana*, Hübner; Haworth; Stephens; Wood, fig. 1076.

DESCRIPTION OF PLATE XCV.

INSECTS.—Fig. 1. Peronea albicostana (the white-edged button).
„ Fig. 2. Peronea bistriana (the double bay streak).
„ Fig. 3. Peronea similana (the pale-edged button).
„ Fig. 4. Peronea plumbana (the lead-coloured).
„ Fig. 5. Peronea trigonana (the three-dotted), Boscana of Haworth.
„ Fig. 6. Peronea Logiana (the Logian).
„ Fig. 7. Peronea Schalleriana (the Schallerian).
„ Fig 8. Peronea rufana (the red triangle).
„ Fig. 9. Peronea asperana (the white-shouldered).
„ Fig. 10. A new variety of asperana.
„ Fig. 11. Peronea borana (the crested buff).

INSECTS.—Fig. 12. Peronea variegana. 13. A dark variety (the common rough-wing).
„ Fig. 14. Peronea obsoletana (the obscure button).
„ Fig. 15. Peronea Leachiana (the Leachian).
„ Fig. 16. Peronea Capucina.
„ Fig. 17. Peronea albana.
PLANT. — Fig. 18. Galeobdolon luteum (yellow archangel).

All the insects figured in this plate are in the collection of Mr. Bentley, except P. Leachiana, and P. albana in the British Museum, and Capucina, from the cabinet of the Rev. W. Johnson. H. N. H.

SPECIES 40.—PERONEA ALBICOSTANA[s].—(Plate XCV., Fig. 1.)—Measures 10 or 11 lines in expanse; fore wings pale reddish, slightly sprinkled with dusky atoms, and with the extreme costal margin white; hind wings ashy-brown. Taken at Dover and in the New Forest, in August.

[s] SYNONYME.—*Peronea albicostana*, Stephens; Wood, fig. 1079.

SPECIES 41.—PERONEA BISTRIANA[t].—(Plate XCV., Fig. 2.)—Measures about 10 lines in expanse; fore wings pale, very slightly marked with dusky atoms; the costa paler, with two clear bay-coloured streaks, one, which is the broadest, running from the base of the wing nearly to the apical angle, and the other, which is subulated, along the inner margin, which extends along the apical margin, and another near the apex; hind wings pale and immaculate. Taken in July and August, at Birch Wood, in Kent, but very rare.

[t] SYNONYME.—*Tortrix bistriana*, Haworth; Stephens; Wood, fig. 1078.

SPECIES 42.—PERONEA SIMILANA[u].—(Plate XCV., Fig. 3.)—Measures nearly 10 lines in expanse; fore wings "pale reddish, with minute, elevated, dusky scales; on the middle of the costa is a triangular fuscous spot, with a darker cloud attached to the angle on the disk; at the base of the inner margin is a second smaller spot of similar colour; posterior wings pale whitish-brown." Taken near Birch Wood, Kent, in the autumn.

[u] SYNONYME.—*Peronea similana*, Stephens; Wood, fig. 1080.

SPECIES 43.—PERONEA PLUMBANA[v].—(Plate XCV., Fig. 4.)—Measures 8 or 9 lines in expanse; fore wings reddish-leaden coloured; the costa darkest at the base, with small, elevated, dusky dots, few in number, scattered over the disk, and in certain positions, with three more conspicuous, and as though impressed, nearly united together, and arranged in a triangle near the middle of the costa, and one within paler; hind wings whitish, or pale brown. Taken in the New Forest and in Kent, in September.

[v] SYNONYMES.—*Pyralis plumbana*, Fabricius. *Tortrix plumbosana*, Haworth; Stephens; Wood, fig. 1082.

SPECIES 44.—PERONEA TRIGONANA[w].—(Plate XCV., Fig. 5.)—Measures 8 lines in expanse; fore wings hoary-ash, slightly marked with dusky elevated scales, and a triangular chestnut-brown patch in the middle of the costa; base and inner margin of the wing also rather darker; hind wings brownish; fringe brown. Taken in the Kentish woods, in September, but rare.

[w] SYNONYMES.—*Peronea trigonana*, Stephens; Wood, fig. 1084. *Pyralis Boscana*, Fabricius (?); Haworth.

SPECIES 45.—PERONEA LOGIANA[x].—(Plate XCV., Fig. 6.)—Measures 8 lines in expanse; fore wings ashy-white, sprinkled with very minute black atoms; a small dark patch near the base of the costa, and an elongated

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triangular, dark, ashy patch, varied with lighter spots along the costa, reaching nearly to the tip; hind wings whitish-ash. Taken at Greenhithe, Kent, in September, but very rare.

[d] SYNONYME.—*Tortrix Logiana*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 1091.

SPECIES 46.—PERONEA SCHALLERIANA[e].—(Plate XCV., Fig. 7.)—Varies from 7 to 9 lines in expanse; fore wings hoary or pale brownish; the disk, especially towards the base, bearing a few elevated black scales, and the middle of the costa marked with a large, obtuse, triangular, rusty-red patch, varying in the extent of its colour; hind wings hoary-brown. Taken in woods and gardens about the beginning of September, and rather abundant.

[e] SYNONYME.—*Phalæna Tortrix Schalleriana*, Linnæus; Haworth; Stephens; Wood, fig. 1085.

SPECIES 47.—PERONEA RUFANA[f].—(Plate XCV., Fig. 8.)—Measures 8 lines in expanse; fore wings rusty-red, or reddish, delicately irrorated with dusky scales, and some elevated black dots towards the base near the inner margin, the middle of the costa with a large, triangular, blackish patch. Taken in woods and gardens, in September.

[f] SYNONYME.—*Pyralis rufana*, Fabricius; Hübner; Haworth; Stephens; Wood, fig. 1086.

SPECIES 48.—PERONEA ASPERANA[g].—(Plate XCV., Figs. 9, 10.)—Measures 7 or 8 lines in expanse; fore wings with the basal part snowy-white, varying to ochraceous, the apical half brown or blackish, extending obliquely from the middle of the costal margin nearly to the anal angle, the disk of the wing with elevated scales near the middle and apex, and a bundle of white scales placed before the middle of the wing, and connected with the inner margin; or with the tuft of scales black, and the inner margin ashy; hind wings brown. Taken rather commonly in woods and gardens, in July and August. The fine variety represented in fig. 10 has the apical half of the wing concolorous with the base, the dark part being reduced to a triangular patch on the costa.

[g] SYNONYME.—*Pyralis asperana*, Fabricius; Haworth; Stephens; Wood, fig. 1088.

SPECIES 49.—PERONEA BORANA[h].—(Plate XCV., Fig. 11.)—Measures 7 or 8 lines in expanse; fore wings ochraceous, with a dusky or black patch of elevated scales placed near the inner margin, and which extends nearly to the base, another spot three times as large, and irregularly bilobed on the disk, arising on the costa near the middle, and extending nearly to the apex, where it is deflexed along the apical margin, but less strongly coloured, vanishing before the anal angle; hind wings pale brown. The fore wings vary in being darker coloured, with the apical portion redder. Taken in woods and forests, in August.

[h] SYNONYME.—*Pyralis borana*, Fabricius; Haworth; Stephens; Wood, fig. 1090.

SPECIES 50.—PERONEA VARIEGANA[i].—(Plate XCV., Figs. 12, 13.)—Measures from 7 to 8½ lines in expanse; fore wings glossy, with the basal portion white or grey, and the apical part reddish-brown, varied with dull red and brown, divided obliquely from the basal portion; all the wing more or less varied with darker clouds, and also bearing black elevated scales, arranged into fasciæ in the dark part of the wing. The species is, however, extremely variable, the pale part of the wing being occasionally ochraceous-reddish, and even blackish, as in our fig. 12; near the base of the wing towards the inner margin is also a dark tuft of elevated scales, the shade extending to the margin itself; hind wings ashy-brown. Common in woods, hedges, and gardens, about the end of July.

[i] SYNONYMES.—*Pyralis variegana*, Fabricius; Haworth; Stephens; Wood, fig. 1089.
Tortrix cristana, Hübner.

SPECIES 51.—PERONEA OBSOLETANA[j].—(Plate XCV., Fig. 14.)—Measures 9 lines in expanse; fore wings shining brown, nearly immaculate, with a very obsolete, paler fascia placed somewhat obliquely near the base, and a subovate brown patch in the middle of the costa; hind wings ashy-brown. Taken in July, but very rare.

[j] SYNONYME.—*Peronea obsoletana*, Stephens; Wood, fig. 1074.

SPECIES 52.—PERONEA CAPUANA[k].—(Plate XCV., Fig. 16.)—Measures 8½ lines in expanse; fore wings with the basal half and inner margin of snow-white, the former with a short, abbreviated, angulated fascia, and a smaller discoidal patch of dark brown, and also a few dark scales, the middle of the disk with a white tuft of scales; the extreme half of the wing brown, with a dark abbreviated dash, with two whitish patches between the centre and apical angle, and a number of smaller, paler, shining patches, and a few small, white, elevated scales; hind wings pale brown; head, palpi, and thorax snow-white. In the specimen figured in the plate the white dash along the inner margin is obsolete. Found by the Rev. Mr. Johnson, in the New Forest.

[k] SYNONYME.—*Peronea capuana*, Johnson, in Annals of Nat. Hist.

SPECIES 53.—PERONEA LEACHEANA.—(Plate XCV., Fig. 15.)—Measures 1 inch in expanse; fore wings of a pale ashy-grey, slightly pulverose with darker scales; the costa marked with slight equidistant patches of a darker tint, and a smaller brunneous patch in the middle of the disk, and with smaller brown dots towards the base and apex; hind wings pale luteous-brown, irrorated with small dusky patches towards the costal portion; apical margin with darker dots. Described from an unique specimen in the cabinet of the British Museum, which is very similar to specimens of P. nebulana, sent by Dr. Becker from Germany, in size and colour, but that species has not the dark patches on the costa so distinct as in the British specimen above described, the locality of which is unknown.

SPECIES 54.—PERONEA ALBANA.—(Plate XCV., Fig. 17.)—Measures 7 lines in expanse; fore wings silky-white, with a few white tufts of elevated scales on the disk, the costal margin slightly brunneous, as well as the apical fringe; hind wings pale brown. Closely allied to P. Treueriana, but that species has the costa destitute of the slender brunneous margin, and the disk has a few black scales scattered about near the tip.

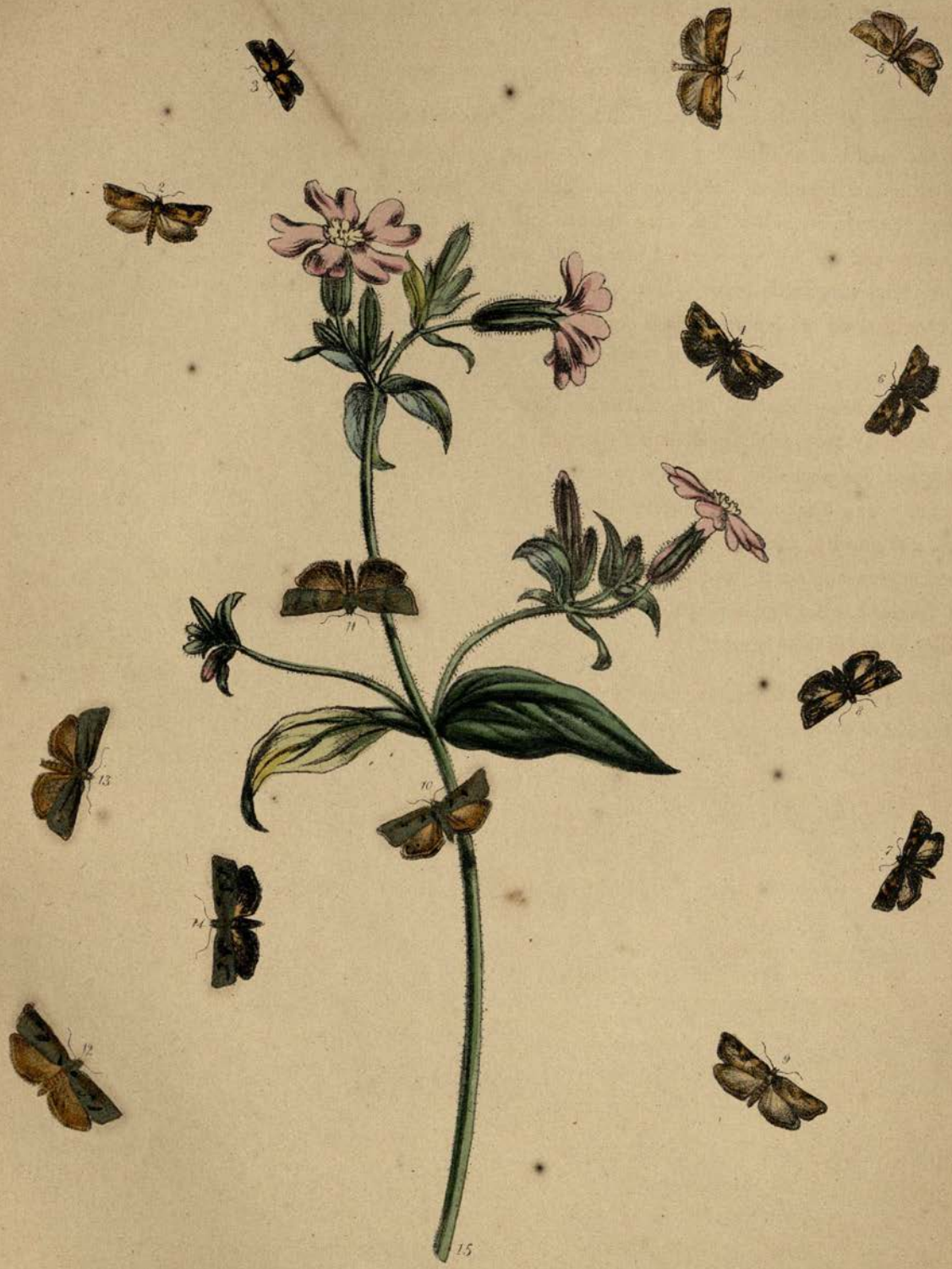
DESCRIPTION OF PLATE XCVI.

INSECTS.—Fig. 1. Acleris costimaculana.
„ Fig. 2. Acleris aspersana. 3. A small variety.
„ Fig. 4. Acleris gnomana. 5. A speckled variety (the dial).
„ Fig. 6. Acleris tripunctulana (the rusty treble spot).
„ Fig. 7. Acleris bifidana (the forked stripe).
„ Fig. 8. Acleris cerusana (the white treble spot).
„ Fig. 9. Acleris scabrana (the grey rough wing).
„ Fig. 10. Leptogramma literana (the black-sprigged green).
INSECTS.—Fig. 11. Leptogramma squamana (the green-tufted).
„ Fig. 12. Leptogramma irrorana (the sprinkled-green).
„ Fig. 13. Leptogramma tricolorana (the tri-coloured green).
„ Fig. 14. Leptogramma fulvomixtana (the tawny and green).
PLANT.—Fig. 15. Lychnis diurna (the red-flowered Lychnis).

The whole of the insects figured in this plate are from the collection of Mr. Bentley. H. N. H.

ACLERIS, HÜBNER, STEPHENS, ILL. PARAMESIA, STEPHENS, CATAL.

The fore wings in this group are considerably rounded at the base of the costa, but not so strongly as in Peronea, and the disk is but slightly squamose. They are generally of pale buff or reddish colours, with distinct markings on the costa; the apical angle is slightly produced or hooked, and the palpi are short, dilated at the extremity, having the terminal joint not concealed by the scales of the preceding joint. The head is slightly tufted in front, and the tail of the males is also tufted.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SPECIES 1.—ACLERIS COSTIMACULANA[l].—(Plate XCVI., Fig. 1.)—Measures 7 lines in expanse; fore wings pale buff, considerably irrorated with small blackish dots, and with a chestnut-brown semicircular patch on the middle of the costa; hind wings and body pale buff. Described from the collection of Mr. Bentley.

[l] SYNONYME.—*Acleris subtripunctulana*, Stephens; Wood, fig. 1092 (?).

SPECIES 2.—ACLERIS ASPERSANA[m].—(Plate XCVI., Figs. 2, 3.)—Measures from 5 to 7 lines in expanse; fore wings luteous-buff, slightly irrorated with brunneous; the base of the costa also brunneous, followed by several small dots of the same colour before the middle of the costa, where a curved broad streak of the same colour arises, and extends to the apex of the wing, having a small pale patch on the costa, the apical portion of the patch more distinctly marked with three or four darker, oblique, abbreviated dashes, along the apical margin of the wing is also a slender line of brunneous; hind wings shining, very pale brown. The smaller individuals, probably females, are of a more uniform redder-buff colour, but the curved dark costal mark is not entirely effaced. Taken at Greenhithe, in the middle of August, by Mr. Chant. Mr. Stephens, in his "Illustrations," regarded this as a variety of A. gnomana.

[m] SYNONYME.—*Tortrix aspersana*, Hübner.

SPECIES 3.—ACLERIS GNOMANA[n].—(Plate XCVI., Figs. 4, 5.)—Measures from 6½ to 8½ lines in expanse; fore wings subretuse, of a ferruginous red, or pale fulvous colour, more or less reticulated with darker scales; the middle of the costa marked with three rather darker patches, arranged in a triangle, which are, however, very obsolete, and appear in certain lights as if impressed; the reticulations are occasionally nearly obsolete, and the costal marks sometimes scarcely visible, whilst at others they are united into a curved line. Found in woods very abundantly, from July to October, and sometimes also in the spring.

[n] SYNONYMES.—*Phalæna Tortrix gnomana*, Linnæus; Haworth; Stephens; Curtis; Wood, fig. 1093.
Tortrix Steineriana, Hübner. *Phalæna Tortrix notana*, Donovan, xi., pl. 369, fig. 3 (var).

SPECIES 4.—ACLERIS TRIPUNCTULANA[o].—(Plate XCVI., Fig. 6.)—Measures 7 or 8 lines in expanse; fore wings subretuse, ferruginous, pale reddish or hoary, with three distinct brown patches arranged in a triangle in the middle of the costa; these patches are also occasionally slightly connected together; hind wings whitish or brownish. Taken in woods, from July to September.

[o] SYNONYMES.—*Tortrix tripunctulana*, Haworth; Stephens; Wood, fig. 1094.
Tortrix tripunctana, Hübner; Curtis.

SPECIES 5.—ACLERIS BIFIDANA[p].—(Plate XCVI., Fig. 7.)—Measures 8 lines in expanse; fore wings subretuse, ferruginous, with an oblique brown striga before the middle of the wing, followed by a central, complete, somewhat sinuated fascia, extending towards the anal angle, and bifid or bifurcate towards the costa; hind wings whitish or pale brown. Taken in woods, in September and October.

[p] SYNONYME.—*Tortrix bifidana*, Haworth; Stephens; Wood, fig. 1095.

SPECIES 6.—ACLERIS CERUSANA[q].—(Plate XCVI., Fig. 8.)—Measures 6 or 7 lines in expanse; fore wings with the costa waved and roughly ciliated; the disk cream coloured, buff, slightly irrorated with ashy scales, some of which are more or less raised, and the middle of the costa with three large blackish or brownish patches placed in a triangle; the head and thorax are also pale buff. Taken in the south of England, especially the New Forest, but rarely, at the end of July, amongst elms.

[q] SYNONYME.—*Tortrix cerusana*, Hübner; Haworth; Stephens; Wood, fig. 1096.

SPECIES 7.—ACLERIS SCABRANA[r].—(Plate XCVI., Fig. 9.)—Measures about 8 lines in expanse; fore wings waved along the costa, the disk ashy with a greenish tinge and rough, the middle of the costa marked with three darker coloured rough patches, arranged in a triangle, visible in certain positions, the one on the disk being the most conspicuous; these spots, however, very considerably in distinctness; the hind wings are pale brownish. Taken in woods, in July and August.

[r] SYNONYMES.—*Pyralis scabrana*, Fabricius; Haworth; Stephens; Wood, fig. 1097.
Tortrix irrorana (var.), Haworth.

LEPTOGRAMMA, CURTIS. OXIGRAPHA, HÜBNER.

The palpi in this group are very thickly clothed with short scales, which do not, however, conceal the terminal joint; maxillary palpi were also detected by Mr. Curtis in T. literana, but very minute and apparently two-jointed; the head is tufted in front; the fore wings with the costa much waved, and rough at the base, the tip slightly falcate, the disk generally of a green colour, with numerous small raised tufts of scales,

[The species of this genus are now considered by several practical entomologists as varieties only of one variable species.]

SPECIES 1.—LEPTOGRAMMA LITERANA[s].—(Plate XCVI., Fig, 10.)—Measures about 9 lines in expanse; fore wings bright pale, grass-green and squamulose; the costa towards the base with several straight, very short, black, transverse lines, and the extremity with a row of minute black dots; the disk with several black lines and marks, a straight one on the middle being most conspicuous; hind wings brownish; the black markings on the disk are occasionally confluent, and sometimes, but very rarely, nearly obliterated. Taken in woods in the south of England, from July to October.

[s] SYNONYME.—*Phalæna Tortrix literana*, Linnæus; Hübner; Donovan, x., pl. 355. fig. 2; Haworth; Stephens; Wood, fig. 1098.

SPECIES 2.—LEPTOGRAMMA SQUAMANA[t].—(Plate XCVI., Fig. 11.)—Measures from 8 to 9½ lines in expanse; fore wings ashy-green, squamulose; the costa minutely irrorated towards the base, and more distinctly marked beyond the middle with slender black dots. This is very variable, both in the tone of colour and in the depth of the irrorations with which the disk is covered, and which occasionally run into short black streaks. Taken in various parts of the south of England, in woods, but rare, being found on oaks, etc., covered with lichen.

[t] SYNONYMES.—*Pyralis squamana*, Fabricius; Donovan, v., pl. 157, f. 7; Haworth; Stephens; Wood, fig. 1099.
Tortrix squamulana, Hübner.

SPECIES 3.—LEPTOGRAMMA IRRORANA[u].—(Plate XCVI., Fig. 12.)—Measures about ¾ inch in expanse; fore wings of a light dull green and scabrous, thickly irrorated with black spots, four or six of which form a line towards the posterior margin, and with a line of black lunules between the veins at the base of the cilia, and a black dot at the apex of each; hind wings ochre-grey, and mottled towards the costa and apex. Also taken in woods in the south of England, in August, but very rare.

[u] SYNONYME.—*Tortrix irrorana*, Hübner; Curtis, Brit. Ent., pl. 440; Stephens; Wood, fig. 1100.

SPECIES 4.—LEPTOGRAMMA TRICOLORANA[v].—Plate XCVI., Fig. 13.)—Measures 9½ lines in expanse; fore wings rough and ashy coloured, having a green tinge, and varied with reddish-brown and whitish shades covered with black atoms, sprinkled over the disk; the costa towards the base with undulated transverse lines, and towards the extremity marked with black dots; the disk is strongly marked with various black clouds and short streaks, and a reddish streak extends from the base to the apical margin, throwing off a branch near the base, which extends obliquely to the middle of the costa; hind wings brownish. Variable in the depth of the

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colours of the fore wings, as well as the clearness of the black markings. Taken in woods in the south and west of England, in the autumn, but rare.

[v] SYNONYME.—*Tortrix tricolorana*, Haworth; Stephens; Wood, fig. 1101.

SPECIES 5.—LEPTOGRAMMA FULVOMIXTANA[w].—(Plate XCVI., Fig. 14.)—Measures 8 or 9 lines in expanse; fore wings green and rugose, the disk with darker clouds intermixed irregularly with fulvous patches, and short black streaks and marks, which are more or less obsolete in some individuals, and one of which is most conspicuous towards the base of the wing, and another towards the extremity of the costa; hind wings brownish. Taken in the New Forest and in the woods of Kent, in the autumn, but rare.

[w] SYNONYME.—*Leptogramma fulvomixtana*, Stephens; Wood, fig. 1102.

DESCRIPTION OF PLATE XCVII.

INSECTS.—Fig. 1. Teras emargana (the chequered notch-wing).
„ Fig. 2. Teras excavana (the iron notch-wing).
„ Fig. 3. Teras effractana (the common notch-wing).
„ Fig. 4. Teras ca dana. 5. Caterpillar (the mallow notch-wing).
„ Fig. 6. Teras ochracea (the pale ochre notch-wing).
„ Fig. 7. Dictyopteryx contaminana (the chequered pebble).
„ Fig. 8. Dictyopteryx ciliana (the white fringed).
„ Fig. 9. Dictyopteryx rhombana (the dark chequered).
INSECTS.—Fig. 10. Dictyopteryx plumbana (the clouded straw).
„ Fig. 11. Dictyopteryx Lœflingiana (the Lœflingian).
„ Fig. 12. Dictyopteryx Forskaliana (the Forskalian), 13. Dark variety.
„ Fig. 14. Capua ochraceana (the ochreous).
PLANT.— Fig. 15. Cynosurus cristatus (crested dog's-tail grass).

All the insects figured in this plate are from the collection of Mr. Bentley. H: N. H.

TERAS, TREITSCHKE. RHACODIA, HÜBNER.

The palpi are rather long and porrected considerably in front of the head, the second joint is elongate-clavate, and the terminal joint is small, and not concealed; the head is tufted in front, but the most distinctive character of the group consists in the deep semicircular notch in the middle of the costa of the fore wings.

SPECIES 1.—TERAS EMARGANA[x].—(Plate XCVII., Fig. 1.)—Measures 9 or 10 lines in expanse; fore wings with the basal portion pale ochreous, waved with slender, transverse, brown streaks of variable length, and the apical portion chestnut-brown, with pale ochreous spots towards the apex, which is arranged in transverse lines; the costal notch is deep and slightly sinuated; hind wings buff-brown, slightly reticulated towards the costal, and apical parts. Taken in woods, in July and August, but rare.

[x] SYNONYME.—*Pyralis emargana*, Fabricius; Haworth; Stephens, Illust., 4, pl. 38, fig. 1; Wood, fig. 1103.

SPECIES 2.—TERAS EXCAVANA[y].—(Plate XCVII., Fig. 2.)—Measures about 10 lines in expanse; fore wings dark orange, the base slightly marked with slender, dusky, waved strigæ, two of which are somewhat more conspicuous than the rest; across the middle of the wings is an ash-coloured fascia sinuated on both its margins, the edge of the costal incision (which is not deep) marked with the same colour; the apical portion of the wing obscurely reticulated with brown; hind wings pale, greyish-ochreous, and reticulated towards the outer angle. Taken in the autumnal months in woods, but not abundantly.

[y] SYNONYMES.—*Tortrix excavana*, Haworth; Stephens; Curtis, Brit. Ent., pl. 699; Wood, fig. 1104.
Phalæna Tortrix emargana. var., Donovan, iii., pl. 106, fig. 5.

SPECIES 3.—TERAS EFFRACTANA[z].—(Plate XCVII., Fig. 3.)—Measures 9 or 10 lines in expanse; fore wings of a nearly uniform greyish-brown colour, the disk being but very faintly reticulated, and marked nearly across the middle with an oblique, nearly obsolete, sinuated, brown fascia; a few minute, elevated, white scales are also

scattered over the wings, the inner margin of which is also occasionally ochraceous; hind wings brown. Taken in woods in the autumn, being the most abundant species in the genus.

[a] SYNONYMES.—*Tortrix effractana*, Hübner; Haworth; Curtis; Stephens; Wood, fig. 1105.
Phalæna Tortrix emargana, Donovan, iii., pl. 106, fig. 1.

SPECIES 4.—TERAS CAUDANA[a].—(Plate XCVII., Figs. 4, 5.)—Measures 8 or 9 lines in expanse; fore wings subcaudate at the tip, grey, very obsoletely reticulated, and with a nearly obsolete fascia across the middle; the inner margin also occasionally fulvous, the costal incision very shallow; hind wings brown. The caterpillar is green speckled with black, and a reddish head. Taken in Yorkshire and other northern parts of the country, in August; rare near London.

[a] SYNONYME.—*Pyralis caudana*, Fabricius; Haworth; Stephens; Curtis; Wood, fig. 1106.

SPECIES 5.—TERAS OCHRACEA[b].—(Plate XCVII., Fig. 6.)—Measures 9½ lines in expanse; fore wings of a very pale ochraceous buff, with the slightest possible indicatures of two slender, oblique, dark streaks extending from the costa, and preceding the costal notch, beyond which the costa and apical margin, and more especially the inner margin, are irrorated with rusty-brown scales; hind wings nearly white, the costal portion slightly maculated. From Mr. Stone's cabinet, now in the collection of Mr. Bentley.

[b] SYNONYME.—*Glyphisia ochracea*, Stephens, Catal. *Teras caudana*, var., Stephens, Ill.

DICTYOPTERYX, STEPHENS.

The palpi in this genus are short, stout, and subclavate, the terminal joint being partially exposed. The head is slightly crested; the fore wings are not incised along the costa, which is also not scabrous, the tip is acute, and rather hooked, the apical margin being rather deeply emarginate, and the disk is generally of pale buff or yellowish colours, and delicately reticulated.

SPECIES 1.—DICTYOPTERYX CONTAMINANA[c].—(Plate XCVII., Fig. 7.)—Measures from 7 to 8½ lines in expanse; fore wings straw coloured or reddish, the basal portion reticulated with chestnut lineolæ, a streak at the base, and a broad central fascia, furcate towards the costa, of dark chestnut-red; the apical portion also reticulated with the same colour, the extremity of the wing bearing a streak of this colour. Common in woods from July to September.

[c] SYNONYME.—*Tortrix contaminana*, Hübner; Haworth; (Harris's Expos., pl. 28, figs. 2, 3.) Stephens; Wood, fig. 1107.

SPECIES 2.—DICTYOPTERYX CILIANA[d].—(Plate XCVII., Fig. 8.)—Measures from 7 to 9 lines in expanse; fore wings acute at the tip, ferruginous, with the disk more or less reticulated with brown or red, and with an obscure, very short, oblique fascia, slightly darker than the colour of the disk, extending from the middle of the costal margin, and darkest on the disk; the apical margin also darker brown; the posterior wings whitish or pale brown, and the fringe white. It varies considerably in size, as well as in the ground-colour of the wings, from dirty red to pale testaceous, and even straw coloured, and also in the strength of the reticulations. Taken in September and October, in woods and hedges.

[d] SYNONYMES.—*Tortrix ciliana*, Hübner; Haworth; Stephens; Wood, fig. 1108.
Phal. Tortrix obscurana, Donovan, xii., pl. 374, fig. 2.

SPECIES 3.—DICTYOPTERYX RHOMBANA[e].—(Plate XCVII., Fig. 9.)—Measures from 7 to 9 lines in expanse; fore wings acute, dull ferruginous, or rusty-brown, obsoletely reticulated with brown, and with a nearly

obsolete striga before the middle of the wing; and also, with a more or less obsolete, sinuose, oblique, entire, dark brown fascia across the middle; between this fascia and the apical margin is a spot of the same colour, on the costal margin; fringe whitish, the hinder part dusky; hind wings pale brown or buff. Common in August and September.

[e] SYNONYME.—*Tortrix rhombana*, Hübner; Haworth; Stephens; Wood, fig. 1109.

SPECIES 4.—DICTYOPTERYX PLUMBANA[f].—(Plate XCVII., Fig. 10.)—Measures from 8 to 9½ lines in expanse; fore wings, with the apical margin, truncate and obtuse, straw coloured and slightly reticulated; the middle of the disk with two red-brown fasciæ or clouds, which are sometimes subconfluent in the middle, and which are somewhat bifid towards the costa; the apical portion of the wing with a dusky marginal striga, and a shorter one near the extremity of the costa; hind wings pale lead coloured or straw coloured. Common in woods and hedges, in August and September.

[f] SYNONYMES.—*Tortrix plumbana*, Hübner; Stephens; Wood, fig. 1110.
Tortrix plumbeolana, Haworth.

SPECIES 5.—DICTYOPTERYX LŒFLINGIANA[g].—(Plate XCVII., Fig. 11.)—Measures 8 lines in expanse; fore wings straw coloured, with very delicate clouds of reddish-brown on the disk, with two more distinct, confluent, rufescent marks towards the costa, resembling two letters X; apical margin with a reddish-brown streak; fringe straw coloured; hind wings ashy-brown. Common in August and September.

[g] SYNONYME.—*Phalæna Tortrix Læflingiana*, Linnæus; Donovan iii, pl. 90; Haworth; Stephens; Wood, fig. 1111.

SPECIES 6.—DICTYOPTERYX FORSKALIANA[h].—(Plate XCVII., Figs. 12, 13.)—Measures about ½ an inch in expanse; fore wings retuse, pale yellowish-buff, delicately reticulated with reddish, covering the whole disk of the wings, the middle of the inner margin generally bearing a large, somewhat triangular, ashy patch, which ls continued by an oblique dark line to the costa, but which is occasionally wanting, being replaced by a dark dot or two, or entirely concolorous; apical margin with a slender dusky line. Common in hedges, in June and July.

[h] SYNONYME.—*Phalæna Tortrix Forskaliana*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 1112.

CAPUA, STEPHENS.

The palpi are short, slender, and densely clothed with short scales above, the terminal joint much exposed and elongate-acute; the antennæ of the males are strongly pubescent; the head is slightly tufted; the fore wings are "very short, broad, and destitute of fasciæ or blotches, very faintly reticulated or tessellated; the hinder margin is truncate and entire, and the costa in the males is straight, reflected, and thickened at the base." —Stephens.

SPECIES 1.—CAPUA OCHRACEANA[i].—(Plate XCVII., Fig. 14.)—Measures from 6 to 8 lines in expanse; fore wings pale ochrey-yellow or ashy, but variable in depth of tone, with very obscure, dark, or dusky-ash reticulations, the meshes of which are occasionally so filled up as to produce a tessellated appearance; fringe dull ochreous-yellow; hind wings ochreous-brown, with the base paler. Taken in the New Forest, in June.

[i] SYNONYME.—*Capua ochraceana*, Stephens, Illustrations; Haust., vol. 4, p. 172.

DESCRIPTION OF PLATE XCVIII.

INSECTS.—Figs. 1, 2. Cheimatophila castaneana (the chestnut).
" Fig. 3. Argyrotoza Bergmanniana (the Bergmannian).
" Fig. 4. Argyrotoza Hoffmanseggiana (the Hoffmanseggian).
" Fig. 5. Argyrotoza Conwayana (the Conwayian).
" Fig. 6. Argyrotoza subaurantiana (the gold-varied).
" Fig. 7. Argyrotoza Daldorfiana (the Daldorfian).
" Fig. 8. Argyrotoza apicalis (the clay tipped).
" Fig. 9. Argyrolepia Lathoniana (the silver spotted).
INSECTS.—Fig. 10. Argyrolepia margaritana (the orange-barred pearl).
" Fig. 11. Argyrolepia æheana (the silver broad bar).
" Fig. 12. Argyrolepia bistrigana the two-striped).
" Figs. 13, 14. Argyrolepia tesserana (the tessellated).
" Fig. 15. Argyrolepia decimana (the ten-dotted).

All the insects figured in this plate are from the cabinet of Mr. Bentley. H. N. H.

CHEIMATOPHILA, STEPHENS.

The narrow glossy wings of this genus, with the costa straight, the apical angle slightly falcate, the disk of a rich purplish-chestnut hue with pale whitish, ill-defined, slanting markings; the palpi porrected and very squamose; the apical joint being scarcely visible; the head tufted in front, and the autumnal and hyemal period of the species, are the chief characters by which it is distinguished from its relations.

SPECIES 1.—CHEIMATOPHILA CASTANEANA[j].—(Plate XCVIII., Figs. 1, 2.)—Measures from 7 to 9 lines in expanse; fore wings of a rich purplish-chestnut colour, much mottled with ashy-white clouds, arranged, for the most part, in very oblique stripes, forming, as it were, two very ill-defined clouded bars across the middle of the wings, behind which is a pale streak near the inner margin, and within the apical margin of the wing is another patch of the same pale colour; hind wings pale brownish, very faintly reticulated towards the outer angle; these spots are very variable, and are sometimes almost obliterated. Taken in the New and other forests, late in the autumn and winter.

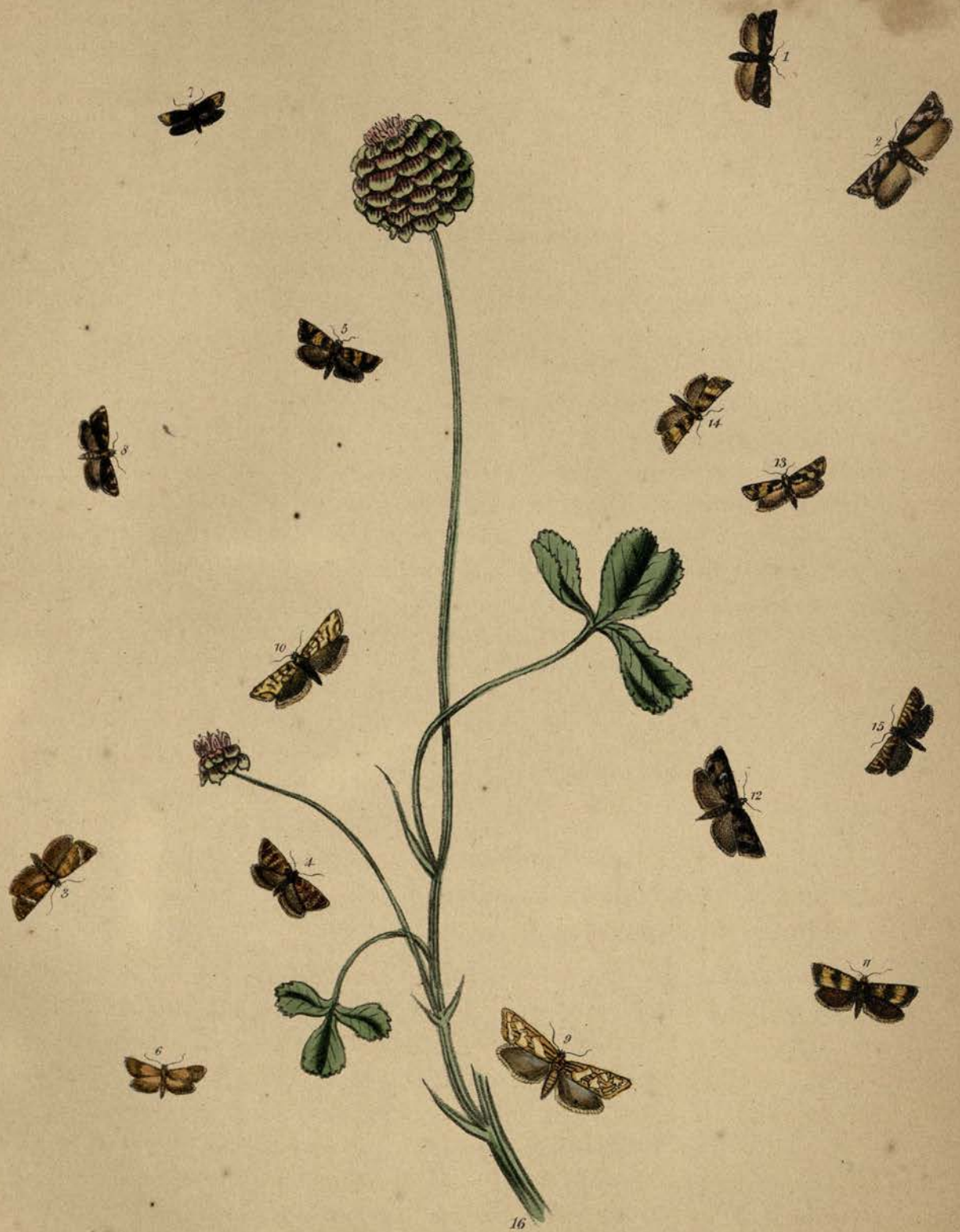
[j] SYNONYMES.—*Tortrix castaneana*, Haworth; Stephens, Ill., Haust. 4, pl. 36, fig. 3; Wood, fig. 1114.
Tortrix hyemana, Haworth. *Tortrix mixtana*, Hübner.

ARGYROTOZA, STEPHENS.

The palpi in this genus are considerably porrected in front of the head and densely squamose, the terminal joint being nearly concealed; the antennæ of the males are scarcely pubescent; the head strongly tufted in front; the fore wings elongate-triangular, truncate along the apical margin, and straight along the costa; the disk being yellow or reddish, and ornamented with silvery curved lines.

SPECIES 1.—ARGYROTOZA BERGMANNIANA[k].—(Plate XCVIII., Fig. 3.)—Measures about ½ an inch in expanse; fore wings rich golden-yellow clouded with orange, and very obscurely reticulated; with four purplish-brown, rather slender fasciæ, which are ornamented with silvery scales, the first near the base, the second before the middle, the third rising on the costa rather beyond the middle and extending to the anal angle, emitting a silvery branch which runs obliquely to the inner margin; the apical margin also similarly ornamented; fringe pale yellow; hind wings blackish-brown; head and thorax canary coloured. This is a very common species, the caterpillar doing much injury in gardens by devouring the young buds of roses, as described in my article on this species, in the late Mr, Loudon's "Gardeners' Magazine," vol. xiii., p. 385.

[k] SYNONYME.—*Phalæna (Tortrix) Bergmanniana*, Linnæus; Donovan; Haworth; Stephens; Wood, fig. 1115.
Tortrix rosana, Hübner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SPECIES 2.—ARGYROTOZA HOFFMANSEGGIANA[l].—(Plate XCVIII., Fig. 4.)—Measures 5 or 6 lines in expanse; fore wings fulvous-brown, obscurely streaked with ferruginous, and with five interrupted silvery strigæ formed of dots, the second striga before the middle of the wing terminating in a yellow lineola on the inner margin; apical margin darker than the base; hind wings blackish. Taken, but very rarely, in woods in the south of England, in June.

[l] SYNONYME.—*Tortrix Hoffmanseggiana*, Hübner; Haworth; Stephens; Wood, fig. 1106.

SPECIES 3.—ARGYROTOZA CONWAYANA[m].—(Plate XCVIII., Fig. 5.)—Measures 5 or 6 lines in expanse; fore wings rather narrow, acute at the tip, fulvous, or occasionally clouded with brown, and obsoletely streaked with silvery dots arranged in about five irregular strigæ, and with two transverse yellowish spots on the middle of the wings, one being placed at the middle of the costa, and the other opposite, but brighter coloured, on the inner margin; hind wings brown or blackish; fringe yellow. Taken in woods in the south of England, in June.

[m] SYNONYMES.—*Pyralis Conwayana*, Fabricius; Haworth; Stephens; Wood, fig. 1117.
Tortrix Lediana, Hübner (?).

SPECIES 4.—ARGYROTOZA SUBAURANTIANA[n].—(Plate XCVIII., Fig. 6.)—Measures ½ an inch in expanse; fore wings "very pale yellowish-orange, with slightly darker clouds, and with some very obscure streaks of silvery dots most distinct on the costa, and vanishing towards the inner margin; fringe pale luteous; hind wings pale yellowish-brown." Taken at Darenth Wood, in Kent, in June.

[n] SYNONYME.—*Argyrotoza subaurantiana*, Stephens, Illustr.

SPECIES 5.—ARGYROTOZA DALDORFIANA[o].—(Plate XCVIII., Fig. 7.)—Measures from ⅓ to ½ an inch in expanse; fore wings shining, blackish-brunneous, with the apical portion orange-red, faintly streaked with gold near the extremity, and with three or four pale dots on the costa; hind wings blackish, or paler, with a dark dot next the anal angle. Taken in woods in the south of England, in June.

[o] SYNONYMES.—*Pyralis Daldorfiana*, Fabricius; Haworth; Stephens; Wood, fig. 1119.
Phalæna Tortrix dimidiana, Donovan, pl. 364, fig. 2.

SPECIES 6.—ARGYROTOZA APICALIS.—(Plate XCVIII., Fig. 8.)—Measures 5½ lines in expanse; fore wings sooty-black, varied with luteous scales forming several very indistinct oblique fasciæ, the intervening spaces occupied with shiny leaden-coloured scales; the middle of the costa marked with a small, rather more conspicuous, pale dot, and the apex of the wing pale luteous; the inner margin of the base pale; hind wings pale brown. Taken by Mr. Bentley, in July, at Tunbridge.

ARGYROLEPIA, STEPHENS, ORTHOTÆNIA AND COCHYLIS, PARS, CURTIS.

The palpi are short and filiform, with the terminal joint nearly concealed; the antennæ of the males slightly pubescent, the head densely tufted; the fore wings elongate-triangular; the apical margin slightly truncate or rounded; the disk yellow, red or tawny coloured, and adorned with silvery scales either irregularly scattered over the surface, or disposed in imperfect streaks, lines, or large blotches.

SPECIES 1.—ARGYROLEPIA LATHONIANA[p].—(Plate XCVIII., Fig. 9.)—Measures 8 lines in expanse; fore wings, with the apical margin obliquely truncate; the disk fuscous-golden coloured, with a broad, very oblique fascia before the middle; two spots beyond the middle and some subapical dots of pearly or silvery-white; hind wings ashy, with yellow fringe. Supposed to have been taken near Tunbridge Wells, in July.

[p] SYNONYME.—*Tortrix Lathoniana*, Hübner; Haworth; Wood, fig. 1120.

SPECIES 2.—ARGYROLEPIA MARGARITANA[q].—(Plate XCVIII., Fig. 10.)—Measures 7 lines in expanse; fore wings silvery, with a pearly gloss at the extreme base, a dot at the base of the costa, followed by two oblique, more or less interrupted, tawny-golden fasciæ, and a third entire streak along the apical margin, with a small costal dot near the apical angle, also tawny-golden; hind wings dark brown. Supposed to have been taken in Kent.

[q] SYNONYME.—*Tortrix margaritana*, Haworth; Stephens; Wood, fig. 1121.

SPECIES 3.—ARGYROLEPIA ÆNEANA[r].—(Plate XCVIII., Fig. 11.)—Measures ½ an inch in expanse; fore wings rounded on the apical margin, the disk deep yellow, with a broad, straight, blackish fascia across the middle, slightly sprinkled with silvery, and on the apical margin a similar broad bar, internally bearing a rather deep, narrow incision, the costa beyond the middle alternately yellow and blackish. Taken in Epping Forest, in June, but very rare. [Near the Willesden Station of the Great Western Railway, in plenty.]

[r] SYNONYME.—*Tortrix æneana*, Hübner; Haworth; Stephens; Wood, fig. 1122.

SPECIES 4.—ARGYROLEPIA BISTRIGANA[s].—(Plate XCVIII., Fig. 12.)—Measures ⅔ of an inch in expanse; fore wings brown, with two paler, obscure, yellowish, nearly straight fasciæ, one before, the other rather behind the middle, and with numerous silvery spots, some of which are disposed in interrupted streaks; the apical margin also paler, and the costa with pale dots; hind wings brown. Taken near London, in the summer.

[s] SYNONYME.—*Argyrolepia bistrigana*, Stephens; Wood, fig. 1123.

SPECIES 5.—ARGYROLEPIA TESSERANA[t].—(Plate XCVIII., Figs. 13, 14.)—Measures 6 or 7 lines in expanse; fore wings yellowish, or tawny-orange, varying to fulvous-brown, with five large patches of yellow or whitish placed thus—.·.·., some of these spots, especially those on the inner margin of the wing, are occasionally more or less obsolete, and the pale spaces are encircled by silvery or shining leaden-coloured streaks, but these are wanting in some of Mr. Haworth's series of varieties described in Lep. Brit., now in my cabinet; hind wings brown. A rare species; taken on downs in the south of England, in June.

[t] SYNONYMES.—*Tortrix tesserana*, Wien. Verz.; Hübner; Haworth; Stephens; Wood, fig. 1124.
Pyralis Heisana, Fabricius.

SPECIES 6.—ARGYROLEPIA DECIMANA[u].—(Plate XCVIII., Fig. 15.)—Measures 7 or 8 lines in expanse; fore wings tawny, with four nearly equidistant, slender, silvery stripes, and some silvery scales near the extremity of the wing, with a basal patch and two large spots on the costa, with two on the opposite margin, and a sub-apical transverse spot, one of golden-yellow; the hind wings dark brown. Taken in woods and downs in the south of England, about the beginning of June.

[u] SYNONYME.—*Tortrix decimana*, Wien. Verz.; Fabricius (?); Hübner (?); Stephens; Wood, fig. 1125.

DESCRIPTION OF PLATE XCIX.

INSECTS.—Fig. 1. Orthotænia Turionana (the orange-spotted). 2. The Caterpillar.
„ Fig. 3. Orthotænia geminana (the scarce orange-spotted). 4. The Caterpillar. 5. A disease in the pine caused by the Caterpillar. 6. Moth in repose.
„ Fig. 7. Orthotænia Bentleyana (the Bentleyan).
„ Fig. 8. Orthotænia Haworthana (the silver marbled).
„ Fig. 9. Orthotænia Resinella (the spotted pine).
„ Fig. 10. Orthotænia Pinetana.
„ Fig. 11. Orthotænia Lepidana.
INSECTS.—Fig. 12. Orthotænia Comitana (the streaked pine). 13. Small dark variety.
„ Fig. 14. Orthotænia Piceana.
„ Fig. 15. Rhyacionia Hastiana (the Hastian).
„ Fig. 16. Rhyacionia flavofasciana.
PLANT.—Fig. 17. A branch of Pine showing the manner in which the caterpillars feed and injure the young shoots.

All the insects figured in this plate are from the cabinet of Mr. Bentley. H. N. H.

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ORTHOTÆNIA, Curtis.

The palpi are porrected horizontally, thickly squamose, but with the terminal joint exposed and slender; the antennæ are slender, and slightly pubescent beneath, in the males; the head is coarsely squamose; the thorax not tufted; the fore wings rather elongate, triangular, with the apical margin rather rounded; the disk generally of red or brown colours, with slender silvery markings, forming irregular spots and fasciæ. The caterpillars are naked and sixteen-footed.

Species 1.—Orthotænia Turionella[v].—(Plate XCIX., Figs. 1, 2.)—Measures from 6 to 11 lines in expanse; fore wings dark orange coloured, with five transverse, irregular, silvery, anastomosing streaks; the second and fourth forked next the costal margin, the third forming a ring in the centre; and the fifth abbreviated, and subapical fringe with a blackish line near the base; hind wings dusky. The caterpillar is reddish-brown, with a black head, and feeds on the shoots of the Scotch fir. Taken in June, in Kent, Norfolk, and Yorkshire; but rare. See the history of this species in "Köllar's Treatise on Injurious Insects," translated by Mrs. Loudon, and published by the publisher of this work.

[v] Synonyme.—*Phalæna Tinea Turionella*, Linnæus; Haworth; Curtis, Brit. Ent., pl. 364; Stephens; Wood, fig. 1126.

Species 2.—Orthotænia geminana[w].—(Plate XCIX., Figs. 3—6.)—Measures from 6 to 8 lines in expanse; fore wings of a cinnamon-red colour (darker than in the preceding species), with several duplicated, clear, silvery strigæ and connecting dashes of the same; the costa slightly dotted with white; hind wings brown. Taken in Surrey, Kent, and Middlesex, in July and August; but rare. Like the preceding and some of the other species of the genus, its caterpillar feeds within the young shoots of the fir, occasionally doing considerable mischief.

[w] Synonyme.—*Tortrix geminana*, Hübner; Stephens; Curtis; Wood, fig. 1127.

Species 3.—Orthotænia Bentleyana[x].—(Plate XCIX., Fig. 7.)—Measures from 10 to 12 lines in expanse; fore wings of a dark ferruginous brown, with five geminated strigæ, and various spots of a silvery-yellow hue, some of which latter form a fascia on the apical margin of the wing; fringe silvery-white with brown dots; hind wings brown. Taken in June and July, on the mountains of Cumberland, and in Scotland; also at Trafford near Manchester, and at Weybridge.

[x] Synonyme.—*Phalæna Tortrix Bentleyana*, Donovan, x., pl. 367, fig. 1; Haworth; Curtis; Stephens; Wood, fig. 1128.

Species 4.—Orthotænia Haworthana[y].—(Plate XCIX., Fig. 8.)—Measures 7 or 8 lines in expanse; fore wings varied with silver and yellowish-buff, with red-brown cloudings, and having a straight fascia towards the base, another broader in the middle, and the third on the apical margin, all marked with silvery-brown and yellow; the costa at the extremity with four red-brown dots; hind wings brown. Taken in Norfolk, in June.

[y] Synonymes.—*Orthotænia Haworthana*, Stephens; Wood, fig. 1129.
Tortrix pinetana, Haworth; Hübner(?).

Species 5.—Orthotænia Resinella[z].—(Plate XCIX., Fig. 9.)—Measures from 7 to 9 lines in expanse; fore wings dark brown, or ferruginous-brown with numerous intricate and irregular, obscure, silvery streaks, some of which are connected together, and are also bifid towards the costa; hind wings smoky-brown. Taken in June and July, in fir plantations in Kent and Surrey.

[z] Synonymes.—*Phalæna Tinea Resinella*, Linnæus; Curtis; Stephens; Wood, fig. 1130.
Tortrix Turionana, Hübner.

SPECIES 6.—ORTHOTÆNIA PINETANA.—(Plate XCIX., Fig. 10.)—Measures 6 lines in expanse; fore wings fulvous-brown, clouded beyond the middle of the wing with richer brown shades; the basal portion of the wing thickly irrorated with black scales, forming three irregular fasciæ angulated outwardly in the middle; the centre one being the most conspicuous; the costa alternately marked with larger and smaller dark dots; the apex, as well as the centre of the disk, with a larger dark spot, and the apical margin dotted with black; hind margin with a paler patch in the middle, and the hind wings pale brown. Taken in Dorsetshire, by Mr. Dale. From the collection of Mr. Bentley.

SPECIES 7.—ORTHOTÆNIA LEPIDANA.—(Plate XCIX., Fig. 11.)—Measures 6½ lines in expanse; fore wings pale brown, varied with pale greyish-brown patches; near the base of the wing is a slight, dusky, curved striga, beyond which, before the middle of the wing, is a paler oblique fascia indented with a black tooth towards the inner margin on the side next the base of the wing, and bearing a rounded lobe on the outer edge near the costa; beyond the middle of the wing is another waved fascia, most conspicuous towards the costa, its inner portion forming a sharp angle, with the front part nearly obliterated; the apex of the wing with a patch of pale greyish-brown, emitting a slender subapical line of the same colour. All the pale parts finely irrorated with small dusky dots; hind wings pale brown. Taken by the Rev. Mr. Bird, near Reading. Described from Mr. Bentley's collection.

SPECIES 8.—ORTHOTÆNIA COMITANA[a].—(Plate XCIX., Figs. 12, 13.)—Measures from 4 to 6 lines in expanse; fore wings reddish-brown and shining, with two geminated, obscure, silvery, streaks, the first near the base, and the second slightly angulated near the middle, beyond which are various obscure, silvery, irregular spots mostly doubled, one near the anal angle being oval, with a dark centre; hind wings brown. Taken in fir plantations, Birchwood, Kent, in June.

[a] SYNONYME.—*Tortrix comitana*, Wien. Verz.; Stephens; Wood, fig. 1131.

SPECIES 9.—ORTHOTÆNIA PICEANA[b].—(Plate XCIX., Fig. 14.)—Measures 6 lines in expanse; fore wings golden-brown, slightly mottled, with several slender, dusky, transverse, curved, slender strigæ near the base, and a nearly straight white fascia before the middle of the wing, having a slight lobe on the middle of its outer edge; at a little distance from the middle of the costa there arises another curved fascia of the same colour, which extends to the anal angle; and beyond this the costa bears three slender, short, oblique, white dashes; hind wings pitchy-brown. In Mr. Bentley's cabinet, from the collection of Mr. Stone.

[b] SYNONYME.—*Tortrix piceana*, Hübner(?).

SPECIES 10.—ORTHOTÆNIA ORNATANA[c].—Measures 8 lines in expanse; fore wings rich chestnut-brown, mottled with darker shades, especially across the broad central part of the wing, which is of a pitchy hue, bearing a few shining leaden-coloured scales towards the inner margin; at a little distance before the middle of the wing is a straight, pale, rather narrow, transverse fascia; and beyond the middle is an oblique one extending to the anal angle, composed of glossy leaden scales, and a slender line of the same near the apex; costa varied especially beyond the middle, with pale patches; hind wings pale brown. Taken in Scotland. In Mr. Bentley's cabinet.

[c] SYNONYMES.—*Orthotænia ornatana*, Bentley.
Orthotænia formosana, Curtis (?). *

* The following is Mr. Curtis's description of his O. formosana:—"Pale fuscous; thorax and superior wings rosy-chestnut; the latter with a considerable number of waved, transverse, pale shining lines as far as the middle, beyond which are two more compound ones, with several shorter on the costa, and a row of spots of the same colour at the base of the cilia; abdomen ochreous at the apex. Similar to *O. nubilana* of Hübner, in size and colour; but the superior wings are a little less obtuse, their colour is very different, and the bar across the middle formed by the waved lines is narrower and more irregular." Locality unknown.

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RHYACIONIA, Hübner, Stephens. ZEIRAPHERA, pars, Curtis.

The palpi are short and slender, porrected like a beak, with the acute terminal joint exposed. The antennæ are very pubescent in the males; the thorax is not crested; the fore wings are short, with the costa straight, and the apical margin obliquely truncate, thereby forming a triangle, with the surface black, with darker elevated scales, and a very oblique snowy-white fascia, which is occasionally more or less broken up and dentate outwardly, a character possessed by no other indigenous species.

Species 1.—Rhyacionia hastiana[d].—(Plate XCIX., Fig. 15.)—Measures from 6 to 8 lines in expanse; fore wings dark brown, varied with blackish spots and streaks, and with a broad, white, rather oblique fascia, very variable in extent, before the middle, with an indentation on the inside, and waved on the outside, beyond which are several lead-coloured spots and elevated scales, and an orange streak along the apical margin; the costa towards the apex with three white dots; hind wings brown. Taken in Devonshire, at the end of May and in June.

d Synonymes.—*Phalæna Tortrix Hastiana*, Linnæus; Fabricius; Curtis, Brit. Ent., pl. 711; Stephens.
Tortrix ulmana, Hübner ♂. *Tortrix areolana*, Hübner ♀.

Species 2.—Rhyacionia flavofasciana.—(Plate XCIX., Fig. 16.)—Measures 7½ lines in expanse; fore wings dark brown, mottled with lighter brown and shining leaden scales; before the middle of the wing is a rather broad, pale fulvous, angulated fascia, on which is an angulated rusty-brown line; centre of the wing darkest, apical portion with an indistinct, oblique, paler fascia extending from the costa to the anal angle, emitting a branch which extends nearly to the apex; the costa marked with pale dots, largest beyond the middle of the wing, each bearing a small black speck; tip of the wing with a dark brown spot, and the middle of the apical margin with a larger dark blotch; hind wings dark brown. From Mr. Stone's cabinet, now in Mr. Bentley's collection.

DESCRIPTION OF PLATE C.

Insects.—Fig. 1. Eupœcilia maculosana. 2. A dark variety (the small black spotted).
„ Fig. 3. Eupœcilia dubitana (the doubtful).
„ Fig. 4. Eupœcilia augustana (the barred marble).
„ Fig. 5. Eupœcilia nana (the barred dwarf).
„ Fig. 6. Eupœcilia pygmæana (the dingy dwarf).
„ Fig. 7. Eupœcilia permixtana (the orange and black).
„ Fig. 8. Eupœcilia sodaliana (the brindled marble).
„ Fig. 9. Phtheochroa rugosana (the rough wing).
„ Fig. 10. Cochylis roseana (the rosy).
Insects.—Fig. 11. Cochylis subroseana (the dingy rosy).
„ Fig. 12. Cochylis ruficiliana (the red fringe).
„ Fig. 13. Cochylis griseana (the oblique barred grey).
„ Fig. 14. Cochylis rupicola (the chalk-cliff Tortrix).
„ Fig. 15. Cochylis Vectisana (the Isle of Wight Cochylis).
Plant. — Fig. 16. Aira Alpina (smooth alpine hair grass).

All the insects in this plate are from the cabinet of Mr. Bentley, except E. pygmæana, and C. ruficiliana from Wood's figures, after Mr. Stephens's specimens. H. N. H.

EUPŒCILIA, Stephens. COCHYLIS, pars, Curtis.

These insects are of small size, and have the palpi short and thick, densely squamose, with the terminal joints nearly concealed; the antennæ are thickly pubescent beneath in the males, the head with a crest between the antennæ; the thorax not crested, and the fore wings rather narrow, elongate-triangular, with the apical margin slightly obliquely truncate; the disk smooth, pale, and generally with a dark central fascia; the hind wings are pale in the males, and dark in the females.

Species 1.—Eupœcilia maculosana[e].—(Plate C., Figs. 1, 2.)—Measures 5 or 6 lines in expanse; fore wings white, varying to ashy, the base itself ashy, with a sinuous brown fascia dotted with black rather before the middle of the wing, which scarcely extends to the costa, beyond which are some irregular brown

spots extending to the tip of the wings; hind wings pale brown, or blackish, paler at the base; fringe white. Common in hedges, in July.

[e] SYNONYME.—*Tortrix maculosana*, Haworth; Stephens; Wood, fig. 1133.

SPECIES 2.—EUPŒCILIA DUBITANA[f].—(Plate C., Fig. 3.)—Measures 6 or 7 lines in expanse; fore wings clouded with chalybeous and black, with two broad fasciæ marked with white and ochreous-yellow, one before and the other beyond the middle; inner margin with a dark patch in the middle, and the apical margin and fringe bluish-black; head and palpi snow-white. Taken in the north of England, and at New Lanark, in Scotland, in July.

[f] SYNONYME.—*Tortrix dubitana*, Hübner; Stephens; Wood, fig. 1138.

SPECIES 3.—EUPŒCILIA AUGUSTANA[g].—(Plate C., Fig. 4.)—Measures from 4 to 6 lines in expanse; head, thorax, and fore wings ochraceous, white and glossy, with darker clouds, with a straight dark fascia across the middle, considerably waved on the outside, and with the apical margin also dark brown, which colour is, however, considerably attenuated towards the costal margin; hind wings whitish, with a brownish fimbria in the male, brown in the female; fringe white. Taken in woods, in July.

[g] SYNONYMES.—*Tortrix augustana*, Hübner; Haworth; Stephens; Wood, fig. 1134.
Phalæna fasciella, Donovan, xiii., pl. 452.

SPECIES 4.—EUPŒCILIA NANA[h].—(Plate C., Fig. 5.)—Measures from $3\frac{1}{2}$ to $5\frac{1}{2}$ lines in expanse; fore wings ochraceous, white with darker shades, with the base and costa as far as the middle of the wing ashy; a broad, brown, central fascia, in which are one or two ochraceous dots, the inner margin also, as well as a striga or slender subapical fascia, of brown, extending from the costa; beyond this the remainder of the wing and fringe are ochraceous and nearly immaculate; hind wings brown, with whitish fringe; the female is darker coloured. Taken in woods, in July.

[h] SYNONYME.—*Tortrix nana*, Haworth; Stephens; Wood, fig. 1136.

SPECIES 5.—EUPŒCILIA PYGMÆANA[i].—(Plate C., Fig. 6.)—Measures 4 lines in expanse; fore wings ashy-ochreous, considerably clouded with black, and irrorated with ashy, especially in the middle and along the extremity of the costa; hind wings black or blackish; fringe brown. Taken at Darenth Wood, in July, but rare.

[i] SYNONYME.—*Tortrix pygmæana*, Haworth; Stephens; Wood, fig. 1136.

SPECIES 6.—EUPŒCILIA PERMIXTANA[j].—(Plate C., Fig. 7.)—Measures from 4 to 6 lines in expanse; fore wings orange-red, with darker brown streaks, and with a transverse paler spot on the costa before the middle of the wing, which terminates in a triangular black patch on the inner margin, and beyond the middle of the wing is a large greyish-black fascia; hind wings white, with a dusky border or entirely black, according to the sex; fringe pale yellow. Taken in June, in woods.

[j] SYNONYME.—*Tortrix permixtana*, Hübner; Haworth; Stephens; Wood, fig. 1137.

SPECIES 7.—EUPŒCILIA SODALIANA[k].—(Plate C., Fig. 8.)—Measures a little more than 6 lines in expanse; fore wings varied with snow-white and cinereous, with several costal black spots and dots, and with a black fascia rather before the middle of the wing; interrupted in the middle, and a second somewhat incurved and slightly waved, and brown towards the apical margin; hind wings brownish. Very rare; taken by Mr. Stephens, at Ripley, in July,

[k] SYNONYME.—*Tortrix sodaliana*, Haworth; Stephens; Wood, fig. 1139.

PHTHEOCHROA, Stephens.

The type of this genus is distinguished by the irregular elevated scales on the disk and the straight costa of its fore wings, and by the very long and slender palpi, having the terminal joint exposed and very distinct; the antennæ in the males are scarcely pubescent beneath; the head is densely tufted, and the thorax is not tufted.

Species 1.—Phtheochroa rugosana[l].—(Plate C., Fig. 9.)—Measures about ¾ inch in expanse; fore wings ashy-buff, glossy, and rugose with dots, lineolæ and costal streaks of white, one of which resembles the letter V, near the middle of the costa; behind which is a short, interrupted, black fascia, and a bright flesh-coloured dash (which fades immediately after death); near the apical margin is an incurved brown fascia, with black dots upon a pale ground, extending to the middle of the margin; hind wings ashy. Taken in hedges and woods, about the middle of June, but not abundantly.

[l] Synonymes.—*Tortrix rugosana*, Hübner; Haworth; Stephens; Wood, fig. 1141.
Phalæna V. album, Donovan, xi., pl. 371, fig. 1.

COCHYLIS, Treitschke.

The palpi in this genus are nearly horizontal, rather short, and clavate, being thickly clothed with scales, which almost conceal the terminal joint; the antennæ are very pubescent in the males; the head is thickly clothed with scales above, forming a tuft; the thorax is not tufted; the fore wings are somewhat narrow, with the costa nearly straight, and the apical margin more or less obliquely truncate; the disk often of a reddish or greyish hue, with a very oblique dark fascia.

Species 1.—Cochylis roseana[m].—(Plate C., Fig. 10.)—Measures about ½ inch in expanse; fore wings of a fine rosy-pink, with the inner and apical margins paler; from the middle of the inner margin arises a very oblique, abbreviated, chestnut fascia, and near the anal angle is a small dark dot on the margin; fringe darker rosy; hind wings pale ashy-brown. Taken at Dover, Darenth Wood, the Isle of Wight, as also in the north of England, in June.

[m] Synonymes.—*Tortrix roseana*, Haworth; Stephens, Illus., 4, pl. 35, fig. 1; Wood, fig. 1142.
Tortrix rubellana, Hübner; Curtis.

Species 2.—Cochylis subroseana[n].—(Plate C., Fig. 2.)—Measures 5 or 6 lines in expanse; fore wings pale rosy-grey; the apical portions of a more brunneous-ashy colour, occasionally varying to whitish, with a central, oblique, dark brown or dusky fascia arising from the inner margin, but vanishing before reaching the costa; hind wings dusky or whitish, according to the sex. Taken in the middle of May in abundance amongst grass on the Isle of Portland, and in June amongst heath, near Ambleside, by Mr. Curtis; also at Birch Wood, Kent.

[n] Synonyme.—*Tortrix subroseana*, Haworth; Stephens; Wood, fig. 1142.

Species 3.—Cochylis ruficiliana[o].—(Plate C., Fig. 12.)—Measures ½ inch in expanse; fore wings of a reddish-leaden colour, with a very oblique, central, abbreviated fascia, and a second brown fascia along the apical margin; fringe red; hind wings brown, with paler fringe. Taken in May and June, in woods in Kent; also in meadows in Yorkshire.

[o] Synonymes.—*Tortrix ruficiliana*, Haworth; Stephens; Wood, fig. 1144.
Tinea ciliella, Hübner (?).

SPECIES 4.—COCHYLIS GRISEANA[p].—(Plate C., Fig. 13.)—Measures ½ inch in expanse; fore wings grey, with a somewhat undulated brunneous fascia extending across the middle of the wing, from the costa to the inner margin; the costa with moderate-sized dusky spots, and a faint, short, brownish fascia near the apical margin; hind wings dark brown.

[p] SYNONYME.—*Tortrix griseana*, Haworth; Stephens; Wood, fig, 1145.

SPECIES 6.—COCHYLIS RUPICOLA[q].—(Plate C., Fig. 14.)—Measures from 6 to 8 lines in expanse; fore wings ochreous; the apical portion more ferruginous, freckled with black, and with a broad, oblique, ferruginous bar across the middle of the wing, edged with white on both sides towards the inner margin; adjoining to which, towards the anal angle, is an indistinct triangular spot; costa spotted with black; hind wings blackish; fringe dusky, with the tips ochreous. Taken in July, at the side of the cliff at Dover; also near London, in June.

[q] SYNONYMES.—*Cochylis rupicola*, Curtis, Brit. Ent., pl. 491; Stephens; Wood, fig. 1146.
N. G. marginana, Stephens, Cat.

SPECIES 6.—COCHYLIS VECTISANA.—(Plate C., Fig. 15.)—Measures nearly 5 lines in expanse; fore wings, head, and thorax of a pale fulvous-buff colour; the former with a satiny gloss, with an oblique, moderately broad, and rather curved fascia; of a rather more decided fulvous colour across the middle, and with the apical part of the wing rather rudely reticulated with the same darker colour, as is also the tip of the wing; hind wings grey and shining, with pale buff fringe. A few specimens of this new species were taken in a salt marsh, near Ryde, in the Isle of Wight, flying over the grass, in the evening of the 5th August, 1843, by S. Stevens, Esq., who has favoured us with the species for illustration in this work.

DESCRIPTION OF PLATE CI.

INSECTS.—Fig. 1. Lozopera alternana (the alternate-barred Tortrix).
„ Fig. 2. Lozopera Dubrisana (the Dover straw).
„ Figs. 3, 4. Small varieties of ditto.
„ Fig. 5. Lozopera Marmoratana (the marbled straw).
„ Fig. 6. Lozopera Straminea (the short-barred straw).
„ Fig. 7. Lozopera Smeathmanniana (the Smeathmannian).
„ Fig. 8. Lozopera Francillana (the Francillanian).
„ Fig. 9. Lozopera badiana (the chestnut straw).
„ Fig. 10. Lozopera Baumanniana (the Baumannian).
„ Fig. 11. Xanthosetia Zœgana (the Zœgian).
„ Fig. 12. Xanthosetia ferrugana (the clouded iron).
INSECTS.—Fig. 13. Xanthosetia hamana (the hook-marked straw).
„ Fig. 14. Xanthosetia diversana (the crossed straw).
„ Fig. 15. Xanthosetia inopiana (the plain drab).
„ Fig. 16. Xanthosetia Luteolana.
„ Fig. 17. Phibalocera Quercana (the long-horned).
„ Fig. 18. Hypercallia Christiernana (the Christiernian).
PLANT. — Fig. 19. Cynosurus cristatus (Crested Dogs'-tail grass).

The whole of the insects in this plate are from the cabinet of Mr. Bentley, with the exception of Marmoratana from Wood's fig., and Baumanniana from a specimen in the British Museum. H. N. H.

LOZOPERA, STEPHENS. COCHYLIS, PARS, CURTIS.. CHLIDONEA, HÜBNER.

The palpi are rather long, subclavate, densely squamose, with the terminal joint nearly concealed; the antennæ are but slightly pubescent in the males; the head is densely inflated on the crown; the thorax is not crested; the fore wings have the apical margin very obliquely truncate, the costa straight, and the disk pale coloured, generally straw coloured or yellow, with indistinct, oblique, darker markings.

SPECIES 1.—LOZOPERA ALTERNANA[s].—(Plate CI., Fig. 1.)—Measures from 10 to 13 lines in expanse; fore wings ochreous or pale buff, with darker and lighter glossy patches; about the middle of the wing is an abbreviated, oblique, blackish striga, followed by a second near the apex, but fainter; the apical margin reticulated with rusty-brown, the costa dotted with brown; hind wings brownish or pale ashy. Taken about the end of July, in grassy places, on the heights near Dover.

[s] SYNONYME.—*Lozopera alternana*, Stephens, Ill. H., pl. 35, fig. 2; Wood, fig. 1147.

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SPECIES 2.—LOZOPERA DUBRISANA[t].—(Plate CI., Figs. 2, 3, 4.)—Measures from 4 to 6 lines in expanse; fore wings pale sulphur or buff, mottled with shining brown and white marks, with a somewhat interrupted, oblique, dusky fascia across the middle, and another more undulated beyond it; hind wings pale, freckled with brown, especially towards the apex, sometimes blackish. Taken in the middle of August, on the cliffs near Dover, by Mr. Curtis.

[t] SYNONYMES.—*Cochylis Dubrisana*, Curtis; Stephens; Wood, fig. 1148.
Eupœcilia luteolana, Stephens (not Xanthosetia luteolana, Hüb.)

SPECIES 3.—LOZOPERA MARMORATANA[u].—(Plate CI., Fig. 5.)—Measures 7 lines in expanse; fore wings pale sulphur, freckled with brown, and variegated with shining white spots and lines, leaving two indistinct, oblique, fuscous bands; costa spotted with brown; hind wings fuscous, freckled with white; fringe white. Taken in the middle of August, near Dover, by Mr. Curtis.

[u] SYNONYME.—*Coehylis marmoratana*, Curtis; Stephens; Wood, fig. 1149.

SPECIES 4.—LOZOPERA STRAMINEA[v].—(Plate CI., Fig. 6.)—Measures 7 or 8 lines in expanse; fore wings pale straw coloured, with a short, oblique, fulvous fascia a little before the middle of the wing, extending from the inner margin nearly to the middle of the disk; the costa with a few obscure tawny dots and a subapical tawny line; hind wings whitish, with long silky white fringe. Taken in meadows and woods, in May and August, and widely dispersed, but not abundant.

[v] SYNONYME.—*Tortrix straminea*, Haworth; Stephens; Wood, fig. 1150.

SPECIES 5.—LOZOPERA SMEATHMANNIANA[w].—(Plate CI., Fig. 7.)—Measures from 5 to 7 lines in expanse; fore wings rather narrow, pale straw coloured and glossy, with faint clouds, and two greyish-brown spots on the costa, one near the middle, and the other towards the apex, opposite to each of which is an oblique, abbreviated, greyish-brown fascia, darkest on the inner margin, the anterior of which is rather curved outwards; these fasciæ vary considerably in intensity and breadth, and the base of the wing is also occasionally more or less tinged with rown.

[w] SYNONYMES.—*Pyralis Smeathmanniana*, Fabricius; Curtis; Stephens, Illustr.; Wood, fig. 1151;
(not *N. G. Smeathmanniana*, Stephens's Cat.) *Lozopera Fabriciana*, Hübner; Haworth; Stephens, Catal.

SPECIES 6.—LOZOPERA FRANCILLONANA[x].—(Plate CI., Fig. 8.)—Measures from 5 to 8 lines in expanse; fore wings dark straw coloured, without clouds or dots, but having two very oblique brunneous fasciæ entirely crossing the wing, arising from two spots on the costa, and occasionally with the costa towards the base suffused with brown; hind wings brownish-grey. Taken in June and July, at Dover, and Darenth, in Kent.

[x] SYNONYMES.—*Pyralis Francillana*, Fabricius; Donovan, x., pl. 355, fig. 1; Stephens; Haworth; Wood, fig. 1152
Tortrix Baumanniana, Hübner (?); but not of Fabricius. *Tortrix sanguinea*, Ochsenheimer.

SPECIES 7.—LOZOPERA BADIANA[y].—(Plate CI., Fig. 9.)—Measures from 6 to 8 lines in expanse; fore wings greyish-straw coloured, and shining or paler straw, with a brown spot at the base of the costa, beyond which is an oblique fulvous-brown fascia, somewhat angulated and interrupted in the middle, and between this and the apical margin is a second broken and abbreviated fascia darkest on the costa; this being occasionally almost reduced to the costal spot; hind wings blackish. Taken in places where burdock abounds, in June and July, being widely dispersed. Isle of Wight, Battersea Fields, Whittlesea Mere, etc.

[y] SYNONYME.—*Tortrix badiana*, Hübner; Curtis; Stephens, Illustr.; Wood, fig. 1153.
Tortrix rubigana, Ochsenheimer. *N. G. Smeathmanniana*, Haworth; Stephens, Catal.; not Loz. Smeathm. supra.

SPECIES 8.—LOZOPERA BAUMANNIANA[z].—(Plate CI., Fig. 10.)—Measures from 6 to 11 lines in expanse; fore wings rather ashy or yellow, the base rather darker, with a chocolate-red spot near the base of the costa,

followed by a very oblique fascia across the middle of the wing of the same colour, angulated and broken near the costa, and edged with silvery, and beyond it another fascia extending from the costa near the preceding to the anal angle, darkest at its extremities, and sometimes much broken; the apical margin slightly spotted with silvery-white; hind wings brown, darkest on the margin. Taken amongst fern and elsewhere, in June, and very widely dispersed, but not common.

[z] SYNONYMES.—*Pyralis Baumanniana*, Fabricius; Haworth; Stephens; Wood, fig. 1154.
Pyralis Hartmanniana Hübner (variety).

XANTHOSETIA, STEPHENS.

This genus derives its name from the yellow or yellowish-red tints of most of the species; the palpi are long and porrected, moderately clavate, with the terminal joint very minute and nearly concealed; the antennæ are pubescent beneath in the males, the head tufted on the crown, the thorax not crested, the fore wings rather elongate, with the costa rather rounded, as is also the apical margin; the apical angle rather acute, the disk, near the apex, with a curved dark streak.

SPECIES 1.—XANTHOSETIA ZŒGANA[a]—(Plate CI., Fig. 11.)—Measures from 9 to 11 lines in expanse; fore wings bright yellow, with the basal part of the costa, a spot in the middle of the wing towards the inner margin, and a large orbicular mark, at the extremity of the wing, of rusty-red; fringe dark golden-red. Taken in grassy places, at the beginning of August, but not common.

[a] SYNONYMES.—*Phalæna Tortrix Zœgana*, Linnæus; Fabricius; Hübner; Donovan, 3, pl. 106, fig. 2; Haworth; Stephens; Wood, fig. 1155.

SPECIES 2.—XANTHOSETIA FERRUGANA[b].—(Plate CI., Fig. 12.)—Measures 8 or 9 lines in expanse; fore wings ferruginous, with a brown spot near the middle of the inner margin, the apical portion of the wing brown, with a large hemispherical ferruginous spot; hind wings deep brown. Taken in Norfolk, Kent, and the New Forest, in August.

[b] SYNONYME.—*Tortrix ferrugana*, Haworth; Stephens; Wood, fig. 1156.

SPECIES 3.—XANTHOSETIA HAMANA[c].—(Plate CI., Fig. 11.)—Measures 9 to nearly 12 lines in expanse; fore wings, head, antennæ, palpi, and tuft at the extremity of the body, sulphur-yellow; the fore wings with a minute brownish dot near the middle of the inner margin, followed by a raised rusty streak from the anal angle nearly to the middle of the disk, where it is bent outwards; the costa is also marked with rusty-brown towards the base and apex; hind wings pale ashy-brown. Taken in grassy places, about the beginning of August.

[c] SYNONYMES.—*Phalæna Tortrix hamana*, Linnæus; Hübner; Haworth; Stephens; Wood, fig. 1157.
Pyralis Zœgana, var. B., Fabricius.

SPECIES 4.—XANTHOSETIA DIVERSANA[d].—(Plate CI., Fig. 14.)—Measures from 8 to nearly 12 lines in expanse; fore wings yellow, more or less distinctly marked with ferruginous dots and strigæ, namely, the costa at the base, and a spot in the middle, whence generally arises a streak, which runs to the inner margin, being slightly bent inwardly at its extremity; near the extremity of the wing is an angulated mark, which, when the wings are closed, forms a ferruginous cross, the apex and the disk of the wing also spotted with rust, these markings varying considerably in intensity; hind wings brown, with the fringe ashy. Taken in grassy places, at the beginning of August.

[d] SYNONYME.—*Tortrix diversana*, Hübner; Haworth; Stephens; Wood, fig. 1158.

SPECIES 5.—XANTHOSETIA ? INOPIANA[e].—(Plate CI., Fig. 15.)—Measures 9 lines in expanse; fore wings glossy-buff, with an ochraceous-red tinge, and destitute of markings, with a faintly raised spot at the extremity of the discoidal cell; hind wings glossy, also concolorous; fringe obscure shining ochreous. Taken in the New Forest, Ripley, etc. I possess Mr. Haworth's series of this very rare species, which ill associates with the present group, the fore wings being narrower than in the preceding species.

[e] SYNONYME.—*Tortrix inopiana*, Haworth; Stephens; Wood, fig. 1159.

SPECIES 6.—XANTHOSETIA LUTEOLANA[f].—(Plate CI., Fig. 16.)—Measures 9 lines in expanse; fore wings luteous-brown, and very glossy; slightly marked beyond the middle with transverse irrorations, and with two very indistinct rather broad fasciæ, one before and the other a little beyond the middle, each ending in a dark patch on the costa; close to the apical margin is a slender dark streak; costa at the base marked with dark dots; hind wings brown and glossy. Described from Mr. Bentley's collection. New Forest, in July.

[f] SYNONYMES.—*Tortrix luteolana*, Hübner.
Pyralis Pillerana, Fabricius, (teste Zinken g. Sommer.) (not Eupœcilia luteolana, St., which is Lozop. Dubrisana, Curtis.)

PHIBALOCERA, STEPHENS.

This genus differs from all the preceding genera of the present family in having very long and slender antennæ; the palpi are also very long and recurved, with the last joint half as long as the preceding, the head slightly tufted in front, and the fore wings subtriangular-ovate, with the apical margin truncated.

SPECIES 1.—PHIBALOCERA QUERCANA[g].—(Plate CI., Fig. 17.)—Varies from 7 to 9 lines in expanse; fore wings orange-yellow or rich buff, sometimes very finely irrorated with purplish-brown, with a small, oblique, dark streak near the base, and two small dark dots placed on a central yellow dash; the costa at the base and a large patch in its middle, of bright yellow; fringe yellow; hind wings nearly white. Common in August.

[g] SYNONYMES.—*Pyralis quercana*, Fabricius; Donovan, 3, pl. 106, fig. 3; Haworth; Stephens; Wood, fig. 1160.
Tortrix Fagana, Hübner.

HYPERCALLIA, STEPHENS.

The antennæ in this genus are of moderate length, but the palpi are greatly elongated and bent outwards and upwards, the terminal joint being half the length of the preceding, and perpendicular; the antennæ are pubescent beneath in the males; the head is tufted in front, the fore wings elongate-triangular, of pale yellow, with rich scarlet markings. This and the preceding genus appear to form the passage from the Tortricidæ to the next family, possessing the general form of the former, but having the long recurved palpi of the following.

SPECIES 1.—HYPERCALLIA CHRISTIERNANA[h].—(Plate CI., Fig. 18.)—Measures from 7 to 9 lines in expanse; fore wings yellow, with five strigæ arising from the costa, of bright crimson, the one towards the base being angulated outwards in the middle, the three following more or less abbreviated, and connected together by an irregular transverse streak; hind wings brownish or whitish. Very rare. Taken by Mr. Stephens, at Darenth Wood, in July.

[h] SYNONYME.—*Phalæna Tortrix Christiernana*, Linnæus; Donovan, ii., pl. 20, f. 1; Haworth; Stephens, Ill., 4, pl. 38, fig. 2; Wood, fig. 1161.

Family YPONOMEUTIDÆ, Stephens.

The insects of this family are distinguished from the Tortricidæ by having the labial palpi long, slender, and generally recurved, and narrower fore wings; and from the Tineidæ, by having the maxillary palpi rarely, and then but slightly, developed. The body is ordinarily elongated and slender, but rather depressed in a few of the groups nearest in relation to the Tortricidæ; the antennæ are moderately long, slender, and simple; the thorax rarely crested; the fore wings entire, and often long; narrow, and often more or less convoluted. Mr. Stephens, to whom we are indebted for the establishment of this family, observes that there is considerable diversity of habit among these insects, some feeding, in the larva state, on flowers; others feeding between the two surfaces of a leaf, devouring the parenchyma; some again live in immense societies, forming extensive webs; amongst the subcutaneous species are some of the most brilliant and minute of the Lepidoptera,* their wings being ornamented with highly-polished metallic scales, and some of them being extremely varied in the number of their tints; others again are very plain; the former set have drooping palpi, the latter ascending ones.

DESCRIPTION OF PLATE CII.

Insects.—Fig. 1. Orthotælia venosa (the dark-veined long-winged).
„ Fig. 2. Depressaria Heracleana (the cow parsnip).
„ Fig. 3. Depressaria umbellana (the large streaked).
„ Fig. 4. Depressaria venosa (the wainscot flat body).
„ Fig. 5. Depressaria nervosa (the coarse wainscot).
„ Fig. 6. Depressaria apicella (the brindled flat body).
„ Fig. 7. Depressaria badiella (the brown brindled flat body).
„ Fig. 8. Depressaria characterosa (the lesser flat body).
„ Fig. 9. Depressaria carduella (the thistle flat body).
„ Fig. 10. Depressaria pulverella.
Insects.—Fig. 11. Depressaria Sparmanniana (the straw-coloured).
„ Fig. 12. Depressaria immaculana (the spotless flat body).
„ Fig. 13. Depressaria Yeatiana (the Yeatsian).
„ Fig. 14. Depressaria ocellana (the red letter).
Plant. — Fig. 15. Rosa villosa (the apple-bearing rose).

All the insects figured in this plate are from the cabinet of Mr. Bentley, except Depressaria venosa, apicella, immaculana, and Yeatiana, which are from Wood.

ORTHOTÆLIA, Stephens.

The curious insect which is the type of this genus possesses long narrow fore wings, truncated along the apical margin, slightly marked with longitudinal dark streaks; simple antennæ of moderate length and long, slender, recurved, labial palpi (the maxillary ones not being developed). The body is considerably elongated, and slightly tufted at the extremity; the head is also slightly tufted in front. The larva feeds in the interior of the bulrush.

Species 1.—Orthotælia venosa[1].—(Plate CII., Fig. 1.)—Measures from 10 to 13 lines in expanse; fore wings ochreous-yellow; the space near the apex of the discoidal cell paler; its anterior and apical margins emitting several brownish radiating streaks, forming together a large, somewhat triangular, dark patch on the apical margin; hind wings whitish, irrorated with brown towards the anal margin. Taken in marshy places, about the end of July.

[1] Synonyme.—*Tortrix venosa*, Haworth's MSS.; Stephens, Ill. H., pl. 35, fig. 3; Wood, fig. 1162.

* It is impossible to avoid the observation which a generalized view of the families of natural objects continually presents to the mind's eye, that certain peculiarities recur in very different tribes. Thus the characteristics of these *small, metallic, subcutaneous* moths occur in the Coleoptera amongst the Halticidæ, and in the Hymenoptera amongst the Chalcididæ. Two of these particular characteristics, namely, smallness joined with metallic tints, also pre-eminently distinguish the Trochilidæ among birds; extreme activity appears to be further characteristic of these analogical groups. It is the duty of the naturalist to notice these analogies wherever they occur; and by a careful comparison of them, we may possibly discover a test of the correctness of our views of the *affinities* of natural objects. Such a comparison, to be effective, is in our present great ignorance absolutely impossible; and if (as has been) attempted, results in profound trifling, such as has lately been published—in which the most trivial and far-fetched resemblances have been seized upon and treated with as much importance as the most self-evident analogies, resting, as in the present instance, upon *several distinct* characteristics.

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DEPRESSARIA, Haworth.

These insects are well distinguished by their very flat bodies in both sexes; their long obtusely-lanceolate fore wings, horizontally incumbent when at rest; their long palpi curved upwards, with the terminal joint very slender, the spiral tongue not being longer than the palpi; the maxillary pair of palpi not developed, and the abdomen broad, depressed, and elongated beyond the hind wings.

Species 1.—Depressaria Heracleana[j].—(Plate CII., Fig. 2.)—Measures from 11 to 14 lines in expanse; fore wings pale grey, with numerous short, interrupted, black streaks on the disk, those towards the base most distinct, with a pale, nearly central spot, and a pale angulated streak beyond the middle, the intervening and following space dotted with black; the apical margin also pale, with a row of dark dots; hind wings brownish. The caterpillar is pale, with black dots and a yellowish head; it feeds on umbelliferous plants in June, and the moth appears in woods in July, and is far from uncommon.

[j] Synonyme.—*Phalæna Tortrix Heracleana*, Linnæus; Haworth; Albin, pl. 38, fig. 61, a—d; Reaumur, Mem., ii., tab. 6, fig. 1; Stephens; Wood, fig. 1163.

Species 2.—Depressaria umbellana[k].—(Plate CII., Fig. 3.)—Measures 10 or 11 lines in expanse; fore wings grey, striped with dark radiating lines, with two approximating (*emarginate*, Fabr.) black dots on the disk, and a row of minute ones along the apical margin; hind wings pale. The caterpillar is green, with the head, neck, and two dotted streaks on the segments black; it feeds on the heads of umbelliferous flowers. Found in July and August.

[k] Synonymes.—*Pyralis umbellana*, Fabricius; Stephens; Wood, fig. 1164.
Depressaria umbellarum, Haworth.

Species 3.—Depressaria venosa[l].—(Plate CII., Fig. 4.)—Measures 9 or 10 lines in expanse; fore wings red-brown or reddish, with all the veins streaked with white, and generally with a brownish subapical patch; the apical margin obtusely subtruncate; hind wings whitish or pale brownish. Taken in July and August, in various parts of the south of England.

[l] Synonyme.—*Depressaria venosa*, Haworth; Stephens; Wood, fig. 1165.

Species 4.—Depressaria nervosa[m].—(Plate CII., Fig. 5.)—Measures about $\frac{3}{4}$ of an inch in expanse; fore wings dull red, with the veins at the tips, as well as the apical margin, dusky; on the disk, near the middle of the wing, are two minute white dots placed longitudinally, and edged with red; hind wings very pale reddish-brown. Taken near London, in July and August. I have also taken it at Ensham, in Oxfordshire.

[m] Synonyme.—*Depressaria nervosa*, Haworth; Stephens; Wood, fig. 1166.

Species 5.—Depressaria apicella[n].—(Plate CII., Fig. 6.)—Measures 10 lines in expanse; fore wings greyish-brown with a red tinge, with numerous obscure dusky streaks and whitish-ashy scales, and with a dusky cloud at the base of the costa and inner margin; hind wings ashy-grey, with a reddish-brown border The caterpillar feeds on the carrot, and the moth appears in August, but is rare.

[n] Synonyme.—*Tinea apicella*, Hübner; Stephens; Wood, fig. 1167.
Depressaria apiosa, Haworth.

Species 6.—Depressaria radiella[o].—(Plate CII., Fig. 7.)—Measures 8 to 10 lines in expanse; fore wings bay coloured, with very indistinct, darker, interrupted lines, the base being clouded with dusky, and the apical margin, especially towards the apex, dotted with blackish; hind wings pale brownish. Taken in July and August, in Norfolk, Kent, Hertfordshire, etc.

[o] Synonyme.—*Tinea badiella*, Hübner; Haworth; Stephens; Wood, fig. 1168.

SPECIES 7.—DEPRESSARIA CHARACTEROSA[p].—(Plate CII., Fig. 8.)—Measures 8 or 9 lines in expanse; fore wings brown, with a purplish tinge, slightly clouded with a darker colour; the costa beyond the middle spotted with black, and the disk with a dark mark like a ? placed longitudinally; hind wings whitish-brown. Taken near London and Dover, in the autumn.

[p] SYNONYME.—*Depressaria characterosa*, Haworth; Stephens; Wood, fig. 1169.

SPECIES 8.—DEPRESSARIA CARDUILLA[q].—(Plate CII., Fig. 9.)—Measures ½ an inch in expanse; fore wings testaceous-red, with dusky atoms, and slightly brighter veins radiating to the costa; near the middle of the wing are two minute black dots, and another more distinct towards the apex; hind wings pale ochreous; head and front of the body yellow. The caterpillar feeds on Centaurea cyanus, and the moth appears in July, but is very rare. Brockenhurst, New Forest.

[q] SYNONYME.—*Tinea carduella*, Hübner; Stephens; Wood, fig. 1170.

SPECIES 9.—DEPRESSARIA PULVERELLA.—(Ochsenheimer, Fischer, and our Plate CII., Fig. 10.)—Measures 9 lines in expanse; fore wings buff, with a rosy tinge; finely irrorated with minute blackish scales; a dark patch near the middle of the wing, preceded by two very minute black and white dots, and followed by a single white one; apical margin with a row of minute black dots; hind wings whitish, silky. Described from Mr. Bentley's collection.

SPECIES 10.—DEPRESSARIA SPARMANNIANA[s].—(Plate CII., Fig. 11.)—Measures 9 or 10 lines in expanse; fore wings pale yellowish-buff, the disk with two small black or brown dots rather wide apart, placed longitudinally, and the apical margin with a few dark dots, and often with a brownish cloud towards the anal angle; hind wings paler and immaculate. The caterpillar feeds on a species of Centaurea, and the moth appears in August.

[s] SYNONYMES.—*Pyralis Sparrmanniana*, Fabricius; Stephens; Wood, fig. 1172.
Tinea flavella, Hübner. *Depressaria flavosa*, Haworth.

SPECIES 11.—DEPRESSARIA IMMACULANA[t].—(Plate CII., Fig. 12.)—Measures 8 lines in expanse; "fore wings pale yellow or lemon colour, totally immaculate, with a few very minute black atoms; hind wings yellowish-ash, with a faint purplish tinge. Taken in July, in the New Forest, near Brockenhurst."—Stephens.

[t] SYNONYME.—*Depressaria immaculana*, Stephens; Wood, fig. 1174.

SPECIES 1.—DEPRESSARIA YEATIANA[u].—(Plate CII., Fig. 13.)—Measures nearly ¾ of an inch in expanse; fore wings grey, with a central spot and two dots of black approximating together obliquely; along the apical margin are four or five blackish dots; hind wings whitish. Taken in various parts of the south of England, in the autumn.

[u] SYNONYMES.—*Pyralis Yeatiana*, Fabricius; Haworth; Stephens; Wood, fig. 1173.
Phalæna albidana, Donovan, xi., pl. 377, fig. 2.

SPECIES 13.—DEPRESSARIA OCELLANA[v].—(Plate CII., Fig. 14.)—Measures rather more than ⅝ of an inch in expanse; fore wings with the apical margin rounded, and dotted with black, the disk ashy-grey, slightly irrorated, and the costa spotted obscurely with dusky, the middle of the disk with a sanguineous red mark like an **S**, in which posteriorly there is a minute white dot, and two minute black ones at its base; the inner margin towards the base with a dusky curved mark; hind wings pale brownish. Taken in July and August, in woods and hedges.

[v] SYNONYMES.—*Pyralis ocellana*, Fabricius; Stephens; Wood, fig. 1175.
Tenea Signella, Hübner. *Depressaria signosa*, Haworth.

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DESCRIPTION OF PLATE CIII.

INSECTS.—Fig. 1. Depressaria applana (the common flat-body).
„ Fig. 2. Depressaria putridella (the brown veined).
„ Fig. 3. Depressaria atomella (the powdered).
„ Fig. 4. Depressaria costosa (the dingy straw).
„ Fig. 5. Depressaria Alstrœmeriana (the Alstrœmerian).
„ Fig. 6. Depressaria irrorella (the dusted flat body).
„ Fig. 7. Depressaria liturella (the purple flat body).
„ Fig. 8. Depressaria Bluntii (Blunt's flat body).
„ Fig. 9. Depressaria purpurea (the lesser purple).
„ Fig. 10. Depressaria albipunctella (the rufous brindled).
„ Fig. 11. Depressaria Damella.
INSECTS.—Fig. 12. Depressaria gilvella (the brindled straw).
„ Fig. 13, Depressaria curvipunctosa (the curve-dotted).
„ Fig. 14. Depressaria propinquella.
„ Fig. 15. Anacampsis Malvella.
„ Fig. 16. (The Caterpillar).
PLANT. — Fig. 17. The larva of Anacampsis Malvella is represented on a species of Mallow, as figured by Fisher.

All the insects figured in this plate are from the cabinet of Mr. Bentley, with the exception of irrorella and Bluntii, which are from Wood.

SPECIES 14.—DEPRESSARIA APPLANA[w].—(Plate CIII., Fig. 1.)—Measures 8 or 10 lines in expanse; fore wings ashy, or reddish-brown, with the costal and apical margins dotted with dusky, the dots running into obscure stripes, the inner margin near the base also with a dusky curved mark; the middle of the disk with two or three very minute white dots placed longitudinally behind two black ones placed obliquely; hind wings ashy. The caterpillar feeds on various umbelliferæ, and the moth may be found throughout the year in hedges, gardens, outhouses, etc.

[w] SYNONYMES.—*Pyralis applana*, Fabricius; Haworth; Stephens; Wood, fig. 1776.
Tinea cicutella, Hübner. *Phalæna punctana*, Clerk, Phal., tab. 2, f. 15.

SPECIES 15.—DEPRESSARIA PUTRIDELLA[x].—(Plate CIII., Fig. 2.)—Measures nearly $\frac{3}{4}$ of an inch in expanse; fore wings of a very pale brown, with the veins beyond the middle of the wing brown, terminating in a row of apical dark dots, as well as a short streak, near the base of the inner margin, two minute black dots placed obliquely on the disk before the middle of the wing, followed by a brown and a white one, the latter edged with black; hind wings whitish-brown. Taken in Hampshire and Norfolk, in August.

[x] SYNONYME.—*Tinea putridella*, Hübner; Haworth; Stephens; Wood, fig. 1180.

SPECIES 16.—DEPRESSARIA ATOMOSA[y].—(Plate CIII., Fig. 3.)—Measures nearly $\frac{3}{4}$ of an inch in expanse; fore wings pale testaceous, slightly clouded and varied with minute black dots, intermingled with a few rosy ones, the apical margin rounded and marked with an indistinct row of dots, and the base with black dots; hind wings whitish-ash. The caterpillar feeds on the broom, and the moth appears in August and September, and also occurs in the spring, but is rare.

[y] SYNONYME.—*Depressaria atomosa*, Haworth; (Hübner?); Stephens; Wood, fig. 1181.

SPECIES 17.—DEPRESSARIA COSTOSA[z].—(Plate CIII., Fig. 4.)—Measures 8 or 9 lines in expanse; fore wings reddish-buff, finely irrorated with dusky, with a large, oblong, brown patch towards the costa in the middle of the wing, preceded by a minute black dot in a paler subcentral space; fringe reddish; hind wings whitish-brown. Taken at the beginning of the autumn.

[z] SYNONYME.—*Depressaria costosa*, Haworth; Stephens; Wood, fig. 1182.

SPECIES —DEPRESSARIA ALSTRŒMERIANA[a].—(Plate CIII., Fig. 5.)—Measures 8 lines in expanse; fore wings pale brownish-white, and slightly clouded with brownish, palest along the costa at the base, and with a few dusky costal spots and an irregular row along the apical margin, very indistinct; towards the middle of the costa is a large brown patch, resting behind upon a rusty streak; hind wings ashy-white. Taken in the autumn and spring, in hedges, osier-grounds. etc.

[a] SYNONYMES.—*Phalæna Tortrix Alstrœmeriana*, Linnæus; Haworth; Stephens; Wood, fig. 1179.
Tinea puella, Hübner.

SPECIES 19.—DEPRESSARIA IRRORELLA[b].—(Plate CIII., Fig. 6.)—Measures about 8 lines in expanse; fore wings pale yellow, with some very obscure darker clouds and minute fuscous atoms, one of which is conspicuously larger towards the base near the costa; hind wings whitish.—Stephens. Taken in the New Forest, near Brockenhurst, in July.

[b] SYNONYME.—*Depressaria irrorella*, Stephens; Wood, fig. 1183.

SPECIES 20.—DEPRESSARIA BLUNTII[c].—(Plate CIII., Fig. 8.)—Measures 9 or 10 lines in expanse; fore wings purplish-chestnut, palest along the costa, with a double, irregular, oval mark on the disk, of a dirty white colour; hind wings pale brown. Taken in July, at Southchurch, in Essex.

[c] SYNONYME.—*Depressaria Bluntii*, Curtis, Brit. Ent., pl. 221; Stephens; Wood, fig. 1185.

SPECIES 21.—DEPRESSARIA PURPUREA[d].—(Plate CIII., Fig. 9.)—Measures about ½ an inch in expanse; fore wings purplish-red, with the costa brown, often irrorated with rosy and with a large dusky patch on the middle of the costa, bearing at each end a pale slender mark, which are occasionally obsolete; hind wings brown. Taken in the autumn and spring, in various distant localities.

[d] SYNONYME.—*Depressaria purpurea*, Haworth; Stephens; Wood, fig. 1186.

SPECIES 22.—DEPRESSARIA ALBIPUNCTELLA[e].—(Plate CIII., Fig. 10.)—Measures ¾ of an inch in expanse; fore wings rusty-brown, or rusty, with the veins beyond the middle of the wing streaked with black, and bearing a white central dot, obscurely edged with brown, the apical margin dotted with brown; hind wings grey-brown. The caterpillar feeds on the hemlock, and the moth appears in the autumn.

[e] SYNONYME.—*Tinea albipunctella*, Hübner; Haworth; Stephens; Wood, fig. 1178.

SPECIES 23.—DEPRESSARIA DAMELLA.—(Ochsenheimer, and our Plate CIII., Fig. 11.)—Measures 9 lines in expanse; fore wings palish brown and glossy; the base with a slight reddish tinge; a conspicuous black dash placed before the middle of the wing, with an oblong black dot between it and the costa; all the middle and apical part of the wing streaked with black lines, which are, however, interrupted in several parts with paler colour, especially about half-way between the centre and extremity of the wing, where there is a more conspicuous pale patch; apical margin with a row of black dots. Described from Mr. Bentley's collection. Taken near London, in August.

SPECIES 24.—DEPRESSARIA GILVELLA[g].—(Plate CIII., Fig. 12.)—Measures ¾ of an inch in expanse; fore wings buff, or pale reddish-ochreous, finely irrorated with brown; the costa slightly dotted with brown, middle of the wing with brown spots, preceded (towards the base of the wing) by two, and followed by one minute black dot; apical margin slightly dotted with black; inner margin, near the base, with a dusky curved streak; hind wings whitish. The caterpillar feeds on the scabious, etc.; and the moth is taken in the autumn and spring, amongst osiers, in various parts of the country.

[g] SYNONYME.—*Tinea gilvella*, Hübner; Haworth; Stephens; Wood, fig. 1171.

SPECIES 25.—DEPRESSARIA CURVIPUNCTOSA[h].—(Plate CIII., Fig. 13.)—Measures 7 or 8 lines in expanse; fore wings grey or purple-brown, finely sprinkled with brown atoms, the costa dotted with brown, and the disk of the wing with a small, black, curved streak in the centre, which is sometimes interrupted in the middle; apical margin dotted with brown; hind wings ashy-brown. Taken in August and in March, in hedges.

[h] SYNONYME.—*Depressaria curvipunctosa*, Haworth; Stephens; Wood, fig. 1177.

SPECIES 26.—DEPRESSARIA PROPINQUELLA.—(Fischer, and our Plate CIII., Fig. 14.)—Measures 7½ lines in expanse; fore wings pale buff, finely irrorated with black atoms; towards the middle of the wing, but rather

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approximating towards the costa, is a dark patch; preceding which is a very minute black speck, and the costa in front of this is much freckled with blackish scales; apical margin with an irregular row of minute black specks.

ANACAMPSIS, Curtis.

The insects in this extensive group have the antennæ longer than in the preceding genus, and the fore wings are narrower and lanceolate, with the tips obtusely rounded; the palpi are long, slender, and bent upwards in front of the eyes, with the terminal joint acuminated; the spiral tongue is shorter than the palpi. Like Depressaria, however, the wings in repose are horizontal and incumbent; the legs are of moderate length, and the wings generally simple in their colours, and obscure or confused in their markings.

Species 1.—Anacampsis malvella.—(Curtis, and our Plate CIII., Figs. 15, 16.)—Measures 7 lines in expanse; fore wings uniform brown, with two small black dots on the disk before the middle, placed obliquely, and another a little beyond the middle; hind wings rather paler brown; fringe concolorous. Common about grassy places, in July. Described from Mr. Bentley's cabinet.

DESCRIPTION OF PLATE CIV.

Insects.—Fig. 1. Anacampsis juniperella (the juniper).
„ Fig. 2. The caterpillar.
„ Fig. 3. Anacampsis laticinctella (the poplar).
„ Fig. 4. —— —— variety.
„ Fig. 5. —— —— the caterpillar.
„ Fig. 6. Anacampsis rusticella (the dusted black).
„ Fig. 7. Anacampsis longicornis (the long-horned).
„ Fig. 8. Anacampsis Listerella (the Listerian).
„ Fig. 9. Anacampsis nebulea (the dotted brown).
„ Fig. 10. Anacampsis Betulea (the birch).
„ Fig. 11. Anacampsis rhombella (the black speckled grey).
„ Fig. 12. Anacampsis cinerella (the cinereous).
„ Fig. 13. Anacampsis Ericæ.

Insects.—Fig. 14. Anacampsis zephyrella (the powdered grey).
„ Fig. 15. Anacampsis terrella (the subcinereous).
„ Fig. 16. The caterpillar.
„ Fig. 17. Anacampsis lutarea (the clay-coloured).
„ Fig. 18. Anacampsis annulicornis (the ring-horned).
„ Fig. 19. Anacampsis serricornis.
„ Fig. 20. Anacampsis dodecella (the small black speckled grey).
„ Fig. 21. Anacampsis Mouffetella (the dotted grey).
„ Fig. 22, Anacampsis aspera (the rough).
„ Fig. 23. Anacampsis domestica (the domestic).

All the insects in this plate are from the cabinet of Mr. Bentley, except juniperella, nebulea, zephyrella, and annulicornis, from Wood.

Species 2.—Anacampsis juniperella[k].—(Plate CIV., Figs. 1, 2.)—Measures 7 or 8 lines in expanse; fore wings ashy, or ashy-brown, the disk with four dusky blackish patches placed irregularly, and with an undulated pale streak nearly parallel with the apical margin, which has a row of minute black dots; the disk of the wing is occasionally suffused with dusky-brown; hind wings whitish. The caterpillar is green, with slender longitudinal streaks and dots of black. A common species, found in the summer throughout England.

[k] Synonyme.—*Phalæna Tinea Juniperella*, Linnæus; Haworth; Stephens; Wood, fig. 1187.

Species 3.—Anacampsis laticinctella[l].—(Plate CIV., Figs. 3, 4, 5.)—Measures 7 or 8 lines in expanse; fore wings ashy-brown, or hoary, with black atoms, a subapical, whitish, waved streak, and some faint black dots on the apical margin; the disk behind, in some specimens, is suffused with dusky-brown, whilst in other specimens it is considerably varied with whitish, and the abdomen in both sexes is distinguished by a broad yellowish bar. The caterpillar is green, with black, slender, longitudinal streaks and dots, and a brown neck. Taken in gardens and hedges, in June and July.

[l] Synonymes.—*Anacampsis laticinctella*, Stephens; Wood, fig. 1188.
Phalæna Tinea Populella, Linnæus; Haworth.

Species 4.—Anacampsis rusticella[m].—(Plate CIV., Fig. 6.)—Measures 9 or 10 lines in expanse; fore wings narrow, elongate, obtuse, black, or brownish-black, slightly irrorated with pale ashy or whitish atoms

and with a whitish spot on the costa, beyond the middle, emitting a nearly obsolete, angulated, paler streak; hind wings blackish. Taken in gardens and woods, in June.

[m] SYNONYMES.—*Tinea rusticella*, Hübner; Stephens, Illustr.; Wood, fig. 1209. *Recurvaria nigra*, Haworth; Stephens, Cat. *A. noctuella*, Stephens, Illustr.; Wood, fig. 1189.

SPECIES 5.—ANACAMPSIS LONGICORNIS[n].—(Plate CIV., Fig. 7.)—Measures from 7 to 9 lines in expanse; fore wings long, greyish irrorated with black, with an oblique abbreviated streak near the base, another before, and another beyond the middle; the first and third with a black spot on each, and the middle one with two black spots, and with an oblong, black, subapical patch; these markings vary considerably in intensity, from brick-red nearly to black, and are sometimes nearly obsolete; hind wings pale brown, with a yellowish tinge. Taken in the north of England and Scotland, in June and July.—Chatmoss, May 1st, Mr. Edleston.

[n] SYNONYME.—*Anacampsis longicornis*, Curtis, Brit. Ent., pl. 189; Stephens; Wood, fig. 1198.

SPECIES 6.—ANACAMPSIS LISTERELLA[o].—(Plate CIV., Fig. 8.)—Measures 7 lines in expanse; fore wings brown immaculated, or with two or three darker, almost obsolete spots upon the disk, and a subapical row of nearly obsolete brownish spots; antennæ and fore legs annulated with white. Taken in gardens, but not common.

[o] SYNONYME.—*Phalæna Tinea Listerella*, Linnæus; Haworth; Stephens; Wood, fig. 1190.

SPECIES 7.—ANACAMPSIS NEBULEA[p].—(Plate CIV., Fig. 9.)—Measures 7 lines in expanse; fore wings grey-brown, dotted, and clouded with black and ashy-buff, with two larger spots near the apex; the costa with several nearly obsolete dots, and the apical margin with an interrupted, waved, yellowish streak; hind wings ashy-grey. Taken in gardens, in June. [Often confounded with A. malvella, but most nearly allied to A. Betulea, and distinguished by a lighter-coloured spot near the extremity of the costa, and sometimes another spot on the inner edge, immediately under this. On Putney Heath, among gravel, in April and May.]

[p] SYNONYMES.—*Recurvaria nebulea*, Haworth; Stephens; Wood, fig. 1191.
Tinea populella, Hübner.

SPECIES 8.—ANACAMPSIS BETULEA[q].—(Plate CIV., Fig. 10.)—Measures about 8 lines in expanse; fore wings rather narrow, brown, slightly clouded with darker clouds, which are often interrupted by very minute whitish clouds disposed longitudinally in the middle of the wing, and nearly forming a much interrupted but very obsolete dash; extremity of the costa and apical margin dotted with black; hind wings ashy-brown. Taken in woods, in June.

[q] SYNONYMES.—*Tinea Betulinella*, Hübner (?).
Recurvaria Betulea, Haworth; Stephens; Wood, fig. 1192.

SPECIES 9.—ANACAMPSIS RHOMBELLA[r].—(Plate CIV., Fig. 11.)—Measures 7 or 8 lines in expanse; fore wings hoary or hoary-brown clouded with black, a short deep black line at the base of the costa, and a second smaller and brown beyond the middle of the costa; the disk with a few short streaks or dots of black placed longitudinally; the apical margin with an interrupted row of dark dots; hind wings brownish. Taken in the Kentish woods, in June.

[r] SYNONYME.—*Tinea rhombella*, Hübner; Haworth; Stephens; Wood, fig. 1194.

PECIES 10.—ANACAMPSIS CINERELLA[s].—(Plate CIV., Fig. 12.)—Measures 8 or 9 lines in expanse; fore wings ashy-brown, immaculate, shining, sometimes slightly tinged with reddish; hind wings rather obscure. Taken in gardens in Cambridge, Hertford, and Kent.

[s] SYNONYME.—*Phalæna Tinea cinerella*, Hübner; Haworth; Stephens; Wood, fig. 1195.

SPECIES 11.—ANACAMPSIS ERICÆ.—(Plate CIV., Fig. 13.)—Expands 6 lines; fore wings grey-brown, and glossy, with a conspicuous round white patch on the disk, a little before the middle of the wing, with a few white

scales at a small distance beyond the middle; half-way between these and the apex of the wing is a dull whitish, transverse fascia, and the entire apical margin of the wing is whitish-brown, with about 8 black dots; behind the white discoidal spot is a slender black dash, interrupted with white scales; hind wings pale brownish. Described from Mr. Bentley's collection. Taken about heaths in the north of England.

SPECIES 12.—ANACAMPSIS ZEPHYRELLA[t].—(Plate CIV., Fig. 14.)—Measures nearly 8 lines in expanse; fore wings "ashy-brown, with numerous black atoms and spots disposed irregularly, forming a slender longish stripe on the costa, and an adjoining larger spot with a more conspicuous one on the disk towards the hinder margin, which is also slightly spotted with black, and has yellowish fringe; hind wings ashy-brown."—Stephens. Taken near London by Mr. Stephens, and in the New Forest, in June.

SYNONYME.—*Tinea zephyrella*, Hübner; Stephens, Illustr.; Wood, fig. 1193.

SPECIES 13.—ANACAMPSIS TERRELLA[u].—(Plate CIV., Figs. 15, 16.)—Measures 7 lines in expanse; fore wings rather narrower, and with the apex rouuder than in the preceding; the disk brownish-ashy and immaculate, or faintly dotted with brownish; hind wings darkish and very glossy. The caterpillar has the anterior segments black with pale rings, and the hind ones pale greenish, with slender black streaks. Taken in gardens and woods, in June.

[u] SYNONYMES.—*Tinea terrella*, Hübner; Duponchel.
Hæmilis zephyrella, Treitschke.
Recurvaria subcinerea, Haworth; Stephens; Curtis; Wood, fig. 1196.

SPECIES 14.—ANACAMPSIS LUTAREA[w].—(Plate CIV., Fig. 17.)—Measures 7 or 8 lines in expanse; fore wings pale reddish-clay coloured, with an ashy tinge, produced by a few minute ashy atoms; the middle of the disk with two or three contiguous, nearly obsolete, dusky dots; hind wings rather darker. Taken in June, in woods.

[w] SYNONYMES.—*Recurvaria lutarea*, Haworth; Stephens; Wood, fig. 1197.
Tinea verbascella, Hübner.

SPECIES 15.—ANACAMPSIS ANNULICORNIS[x].—(Plate CIV., Fig. 18.)—Measures 6 lines in expanse; fore wings dark brown, with three indistinct, equidistant, pale ash-coloured fasciæ, the central one with a few whitish spots, and the intermediate spaces slightly clouded with black towards the apical margin; near the anterior angle are three black dots placed obliquely; hind wings pale fuscous. A single specimen, taken in the Isle of Wight, in June, is in Mr Stephens's collection.

[x] SYNONYME.—*Anacampsis annulicornis*, Stephens's Illustrations; Wood, fig. 1199.

SPECIES 16.—ANACAMPSIS SERRICORNIS.—(Bentley MS., and our Plate CIV., Fig. 19.)—Expands nearly 8 lines; fore wings narrow, with the sides nearly parallel, dark chestnut-brown with a few darker and lighter scales about the middle of the disk; apical portion rather pale, slightly irrorated with black scales; hind wings ashy-brown; antennæ rather thick and serrated, especially at the tip. Taken in Devonshire by Mr. Bentley.

SPECIES 17.—ANACAMPSIS DODECELLA.—(Linnæus, etc.; Wood, fig. 1200; and our Plate CIV., Fig. 20.)—Expands from 5½ to 7 lines; fore wings pale reddish, or ochreous, with six, or only five, minute, discoidal, black dots, longitudinally arranged in pairs. Coombe Wood, June, but rare.

SPECIES 18.—ANACAMPSIS MOUFFETTELLA[y].—(Plate CIV., Fig. 21.)—Expanse from 6½ to 8 lines; fore wings hoary, with black lines or dots at the base and extremity of the costa, and others larger on the disk, and a row along the apical margin; the basal streaks at the base are sometimes obsolete. July, rare. New Forest, Darenth Wood, etc.

[y] SYNONYMES.—*Phalæna Tinea Mouffetella*, Linnæus; Stephens; Wood, fig. 1201.
Recurvaria punctifera, Haworth.

SPECIES 19.—ANACAMPSIS ASPERA.—(Haworth, etc.; Wood, fig. 1202; and our Plate CIV., Fig. 22.)—Expands about 6 lines; fore wings brownish-leaden coloured, or smoky, with a few scattered, elevated, black dots before the middle of the wing, and an incomplete streak near the apex; the costa and apical margin slightly dotted with black. Gardens, etc., in June.

SPECIES 20.—ANACAMPSIS DOMESTICA.—(Haworth; Wood, fig. 1203; and our Plate CIV., Fig. 23.)—Expands from 4 to 7 lines; fore wings grey, or ashy-brown, with longitudinal, large, black dots, often in pairs, and sometimes confluent into fasciæ; head pale. Common in houses and gardens, in June and July.

DESCRIPTION OF PLATE CV.

INSECTS.—Fig. 1. Anacampsis affinis (the brindled brown).
„ Fig. 2. Anacampsis diffinis (the greater brindled brown).
„ Fig. 3. Anacampsis lacteella (the cream-shouldered).
„ Fig. 4. Anacampsis sarcitella (the white-shouldered).
„ Fig. 5. Anacampsis lanceolella (the black dotted woollen).
„ Fig. 6. Anacampsis Hübneri (the Hübnerian).
„ Fig. 7. Anacampsis contigua (the light-brindled brown).
INSECTS.—Fig 8. Anacampsis sequax (the dark-brindled brown).
„ Fig. 9. Anacampsis proxima (the beautiful brindled brown).
„ Fig. 10. Anacampsis tricolorella (the tri-coloured).
PLANT. — Fig. 11. Epimedium Alpinum (Alpine Barrenwood).

All the insects figured in this plate are from the cabinet of Mr. Bentley, except lanceolella, from Wood.

SPECIES 21.—ANACAMPSIS AFFINIS.—(Haworth; Wood, fig. 1204; and our Plate CV., Fig. 1.)—Expands 5 or 6 lines; fore wings brown, with four black spots or streaks, almost arranged longitudinally, sometimes suffused over the entire wing, and a narrow, subapical, whitish fascia. Gardens and woods, in June.

SPECIES 22.—ANACAMPSIS DIFFINIS.—(Haworth; Wood, fig. 1205; and our Plate CV., Fig. 2.)—Expands rather more than 6 lines; fore wings blackish-brown, slightly powdered with ashy dots, and a faint white dot near the tip of the costa. Rare. Gardens, in June.

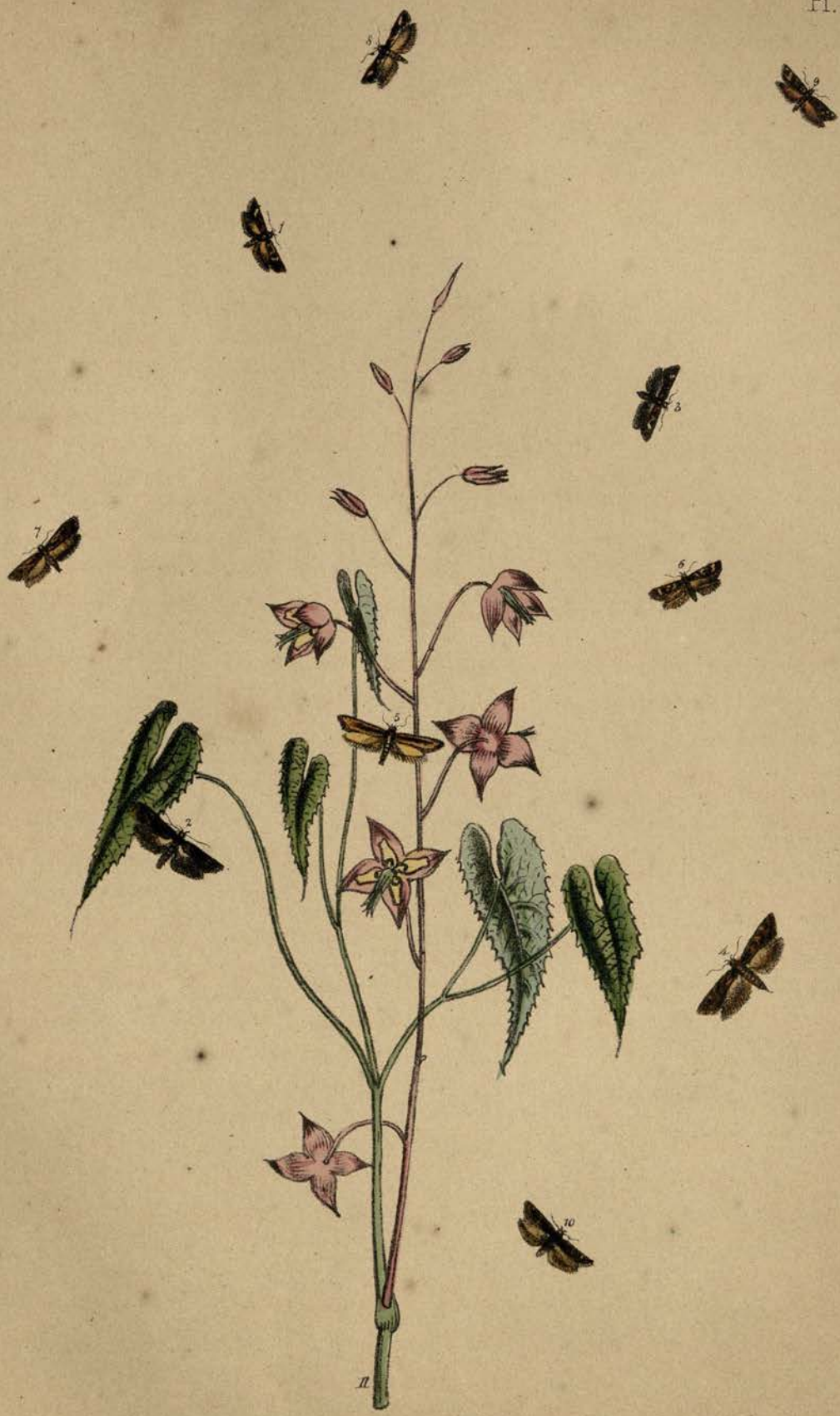
SPECIES 23.—ANACAMPSIS LACTEELLA.—(W. V.; Stephens; Wood, fig. 1208; and our Plate CV., Fig. 3.)—Expands 5 or 6 lines; fore wings dark brown, clouded with black and rosy and white dots; base of the wings within, and a subapical spot of white, varied with ashy and rosy, and extending to the inner margin. Near Dover and London, July, rare.

SPECIES 24.—ANACAMPSIS SARCITELLA.—(Linnæus, etc.; Wood, fig. 1207; and our Plate CV., Fig. 4.)—Expands from 6 to 9 lines; fore wings hoary-grey or ashy, clouded with brown, and dotted with black irregularly; base of wings, head, and thorax white and shining. The caterpillar devours woollens, forming a moveable case, in which it resides, and changes to a pupa. The moth frequents houses, occurring through the year. Mr. Curtis forms this, marmorea, atra, and ochracella into the genus Laverna.

SPECIES 25.—ANACAMPSIS LANCEOLELLA.—(Stephens; Wood, fig. 1210; and our Plate CV., Fig. 5.)—Expands 7 lines; fore wings narrow, blackish-brown, ashy-white beyond the middle, four black dots on the disk, and a series of black dots, nearly confluent, round the apical portion of the wing. North of England, July, rare.

SPECIES 26.—ANACAMPSIS HÜBNERI[2].—(Haworth; Wood, fig. 1211; and our Plate CV., Fig. 6.)—Expands nearly 6 lines; fore wings white or hoary near the base, clouded with black, the clouds beyond the middle of the wings more or less confluent into patches or imperfect fasciæ, one of them slightly rosy. Very rare. Darenth, June.

[2] SYNONYME.—*Tinea granella*, Hübner; but not of Linnæus.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SPECIES 27.—ANACAMPSIS CONTIGUA.—(Haworth; Wood, fig. 1212; and our Plate CV., Fig. 7.)—Expands 6 lines; fore wings ashy-black or brown, with a whitish oblique fascia at the base, and another narrower near the apical margin, connected along the inner margin; head white. Gardens, June.

SPECIES 28.—ANACAMPSIS SEQUAX.—(Haworth; Wood, fig. 1213; and our Plate CV., Fig. 8.)—Expands about 6 lines; fore wings brownish, clouded with black, with one oblique whitish fascia before the middle, and another, less oblique and fainter, near the apical margin; head greyish-ash. Common in gardens in June, and July.

SPECIES 29.—ANACAMPSIS PROXIMA.—(Haworth; Wood, fig. 1214; and our Plate CV., Fig. 9.)—Expands 6 or 7 lines; fore wings greyish-brown, slightly clouded with black, with a large, black, angulated or sinuated fascia-like patch before the middle, from the costa nearly to the inner margin, and beyond this some black clouds and dots. In gardens, about the end of June.

SPECIES 30.—ANACAMPSIS TRICOLORELLA.—(Haworth, Ent. Tr.; Wood, fig. 1215; and our Plate CV., Fig. 10.)—Expands from 6 to 7½ lines; fore wings dark ash, with black markings; a whitish slight fascia near the base, followed by a large black costal blotch, and beyond this dotted with black, and marked with a whitish subapical fascia dilated into a white blotch on the costa. Taken in the Kentish woods, in June.

DESCRIPTION OF PLATE CVI.

INSECTS.—Fig. 1. Anacampsis luctuella (the crescent-shouldered).
„ Fig. 2. Anacampsis subrosea (the little blossom).
„ Fig. 3. Anacampsis decorella (the neat).
„ Fig. 4. Anacampsis marmorea (the beautiful marble).
„ Fig. 5. Anacampsis guttifera (the white-dotted black).
„ Fig. 6. Anacampsis atra (the little black).
„ Fig. 7. Anacampsis subocellea (the eyelet).
INSECTS.—Fig. 8. Anacampsis maculella (the short-barred white).
„ Fig. 9. Anacampsis tremella (the horseshoe).
„ Fig. 10. Anacampsis Lyellella.
PLANT. — Fig. 11. Anemone ranunculoides (yellow-wood Anemone).

All the insects figured in this plate are from the collection of Mr. Bentley.

SPECIES 31.—ANACAMPSIS LUCTUELLA (Hübner(?); Wood, fig. 1206 and 1218; and our Plate CVI., Fig. 1.)—Expands about 6 lines; fore wings black-brown, with darker shades and a clear, semicircular, reddish-white streak in the middle of the costa, and a subapical interrupted fascia of the same colour; apical margin dotted with whitish. Taken in woods, in June.

SPECIES 32.—ANACAMPSIS SUBROSEA[a].—Haworth; Wood, fig. 1219; and our Plate CVI., Fig. 2.)—Expands 5½ lines; fore wings black, with a large, somewhat rosy mark on the costa, enclosing a dark marginal dot, and an indistinct interrupted fascia of purplish-white near the apical margin; hind wings leaden-black, and shining; probably a variety of the last species. Taken in woods, in June.

[a] SYNONYME.—*Tinea luculella*, Hübner.

SPECIES 33.—ANACAMPSIS DECORELLA.—(Haworth, Ent. Tr.; Wood, fig. 1217; and our Plate CVI., Fig. 3.)—Expands about 6 lines; fore wings black-brown, with a recurved basal, and straight apical fascia of white, and a central ochreous or rosy spot, and a slight tinge of the same behind the second fascia. Kent and Norfolk, in June; rare. We have received a fine series of specimens from S. Stevens, Esq.

SPECIES 34.—ANACAMPSIS MARMOREA.—(Haworth; Wood, fig. 1218 (?); and our Plate CVI., Fig. 4.)—Expands 6 lines; fore wings narrow, the basal half of the costal portion black, but interrupted by a subapical, oblique, white fascia; beyond the middle are two irregular red dots, one beyond the other. Norfolk, Birch Wood, and Hampshire, in June.

SPECIES 35.—ANACAMPSIS GUTTIFERA.—(Haworth; Wood, fig. 1216; and our Plate CVI., Fig. 5.)—Expanse 5½ lines; fore wings black, with a small patch at the base, two on the opposite margin before the middle, and two others similarly placed beyond the middle, white. Near London and Scotland, in June; rare.

SPECIES 36.—ANACAMPSIS ATRA[b].—(Haworth; Wood, fig. 1220; and our Plate CVI., Fig. 6.)—Expands 5 or 6 lines; fore wings deep black, obsoletely clouded, but varying in the depth of its tints; the inner margin irregularly ashy; hind wings ashy-brown. Woody places, in June.

[b] SYNONYME.—*Tinea exiguella*, Fabricius; Hübner.

SPECIES 37.—ANACAMPSIS SUBOCELLEA.—(Stephens; Wood, fig. 1221; and our Plate CVI., Fig. 7.)—Expands 6 lines; fore wings hoary-ash, with some obscure brownish streaks on the inner margin, one near the middle, and a second on the anal angle, with a roundish spot between them, and an oblique subapical streak and an imperfect eyelet near the apex. Taken in the New Forest, in June.

SPECIES 38.—ANACAMPSIS MACULELLA.—(Fabricius, etc.; Wood, fig. 1222; and our Plate CVI., Fig. 8.)—Expands 6 lines; fore wings whitish, or somewhat hoary; more or less slightly powdered or clouded with brownish, with a short, oblique, black fascia near the base, from the costa nearly to the inner margin, inclining anteriorly, opposite to which is a large, brown, costal cloud, and a brown dot towards the anal augle. Taken in woods, in June.

SPECIES 39.—ANACAMPSIS TREMELLA[c].—(W. V.; Stephens; Wood, fig. 1223; and our Plate CVI., Fig. 9.)—Expands from 5 to 6½ lines; fore wings snow-white or whitish, with a large patch of black and brown clouds extending from the base to the middle of the costa, which, when the wings are closed, forms a mark like a horseshoe; the apical portion of the wing clouded with ashy, and minutely dotted with black. Hedges, in Kent, Surrey, etc., about the end of June.

[c] SYNONYME.—*Tinea Blattariella*, Hübner, etc.

SPECIES 40.—ANACAMPSIS LYELLELLA.—(Curtis MS., and our Plate CVI., Fig. 10.)—Expands 6½ lines; fore wings buff-white, varied with black markings; viz., the costa with three black narrow spots, the first near the base, the second before, and the third rather beyond the middle, the extremity clouded with brown; disk of the wing with a large, oblong, black patch reaching from near the base to beyond the middle, followed by a nearly apical, oval, brown patch; head, thorax, and hind wings buff-white. Taken in the New Forest, near Brockenhurst, in September. Described from Mr. Bentley's collection.

DESCRIPTION OF PLATE CVII.

INSECTS.—Fig. 1. Anacampsis nivella (the black-dotted white).
„ Fig. 2. Anacampsis aleella (the black clouded).
„ Fig. 3. Anacampsis interruptella (the brown streak).
„ Fig. 4. Anacampsis fulvescens (the tawny).
„ Fig. 5. Anacampsis fuscescens (the faint-dotted brown).
„ Fig. 6. Anacampsis alternella (the black-spotted white).
„ Fig. 7. Anacampsis angustella (the black-spotted brimstone).
„ Fig. 8. Anaeampsis albimaculea (the white-spotted black).
„ Fig. 9. Anacampsis quadripuncta (the four-spotted).
„ Fig. 10. Anacampsis bifasciella (the two-banded).
INSECTS.—Fig. 11. Anacampsis padifoliella.
„ Fig. 12. Anacampsis fugacella.
„ Fig. 13. Anacampsis Æthiops.
„ Fig. 14. Anacampsis fuscipennis.
„ Fig. 15. Anacampsis costella.
PLANT.—Fig. 16. Chlora perfoliata (yellow wort).

All the insects figured in this plate are from the cabinet of Mr. Bentley,

SPECIES 41.—ANACAMPSIS NIVELLA.—(Fabricius, etc.; Wood, fig. 1224; and our Plate CVII., Fig. 1.)—Expands 6 lines; fore wings white, slightly clouded with ashy, with a clear white streak across, near the apica.

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margin; towards the middle of the costa a short, oblique, thickish, black streak bends outwards, and some black dots placed transversely, with an apical row of minute black dots. Taken in woods in the south of England, in June.

SPECIES 42.—ANACAMPSIS ALEELLA[d].—(Fabricius; Stephens; Wood, fig. 1225; and our Plate CVII., Fig. 2.)—Expands 5 or 6 lines; fore wings white, very much clouded with black, forming more or less confluent spots; an oblique fascia at the base, and an irregular streak from thence to the apex. Taken in gardens, about the end of June.

[d] SYNONYME.—*Recurvaria nana*, Haworth.

SPECIES 43.—ANACAMPSIS INTERRUPTELLA.—Hübner; Haworth; Wood, fig. 1226; and our Plate CVII., Fig. 3.)—Expands 5 lines; fore wings somewhat ashy or pale, with a broad brown streak running interruptedly from the base to the apex. Near London, and in Sussex, in June.

SPECIES 44.—ANACAMPSIS FULVESCENS.—(Haworth; Wood, fig. 1227; and our Plate CVII., Fig. 4.)—Expands 5 lines; fore wings pale fulvous, with very slight brown clouds or irrorations; hind wings leaden-brown, shining. Taken near London, Dover, and Hertford, in June.

SPECIES 45.—ANACAMPSIS FUSCESCENS.—(Haworth; Wood, fig. 1228; and our Plate CVII., Fig. 5.)—Expands $4\frac{1}{2}$ lines; fore wings grey-brown, with the base and apical portion darker, with a few (three) small, obscure, dusky clouds or dots in the middle of the wing. Near London, June.

SPECIES 46.—ANACAMPSIS ALTERNELLA.—(Hübner, etc.; Wood, fig. 1229; and our Plate CVII., Fig. 6.)—Expands $6\frac{1}{2}$ lines; fore wings snowy-white, with one or two black spots at the base, followed by a rather oblique fascia, and a triangular, black, costal patch before the middle; then two dots on the opposite margins, and a largish black dot on the hinder margin, with several minute ones on the extreme edge. Taken in the Kentish woods, in June.

SPECIES 47.—ANACAMPSIS ANGUSTELLA.—(Hübner; Haworth; Wood, fig. 1230; and our Plate CVII., Fig. 7.)—Expands about 6 inches; fore wings sulphur-yellow, with four black fasciæ, the first at the base, the second preceding, and the third beyond the middle; these being generally broad, nearly confluent, scarcely reaching either the costa or inner margin, but sometimes reduced to small spots; a fourth broad, black fascia near the apical margin; costa slightly edged with black. Beginning of June, in various places near London.

SPECIES 48.—ANACAMPSIS ALBIMACULEA.—Haworth; Wood, fig. 1231; and our Plate CVII., Fig. 8.)—Expands $5\frac{1}{2}$ lines; fore wings black, with an anterior white fascia, often not reaching to the costa; a second in the middle, sometimes slightly interrupted, and two whitish spots on the opposite margins of the wing; hind wings black. Taken with the last species, and possibly a variety of it.

SPECIES 49.—ANACAMPSIS 4-PUNCTA[e].—(Haworth; Wood, fig. 1232; and our Plate CVII., Fig. 9.)—Expands 6 lines; fore wings narrowed, black or blackish, with a yellowish, but almost obsolete patch near the base, another more conspicuous and situated across the middle, and two dots, opposite to each other, on the costal and inner margin of the wing; hind wings whitish. Near London, August.

[e] SYNONYME.—*Tinea Scopolella*, Hübner.

SPECIES 50.—ANACAMPSIS BIFASCIELLA.—(Fabricius (?); Stephens; Wood, fig. 1233; and our Plate CVII., Fig. 10.)—Expands from 6 to $8\frac{1}{2}$ lines; fore wings narrow, black, shining, with a patch at the base, two fasciæ

across the middle of the wing, the second being interrupted, and with a dot on the apex, yellowish; hind wings whitish-ash, with darker scales. Gardens, round London and Dover, August.

SPECIES 51.—ANACAMPSIS PADIFOLIELLA.—(Hübner, and our Plate CVII., Fig. 11.)—Measures 5 lines in expanse; fore wings much varied with black, white, and brown scales; at a short distance from the base is an oblique white fascia, preceded by a black one, beyond this is a broad, black, discoidal dash, interrupted in the middle and extending to the costa in front; opposite to its middle, on the costa and inner margin of the wing, is a small black dot; head white; hind wings pale grey-brown. Found in gardens, in July. Described from Mr. Bentley's collection.

SPECIES 52.—ANACAMPSIS FUGACELLA.—(Ochsenheimer, and our Plate CVII., Fig. 12.)—Expands 6 lines; fore wings brown, very much freckled with black scales, and with a number of raised brown scales on the disk, which is marked with about three almost obsolete, very oblique, black lines, not reaching the inner margin; the costa with three conspicuous black dots, and the apical margin dotted with black; hind wings whitish. Taken in gardens, in June. Described from Mr. Bentley's collection.

SPECIES 53.—ANACAMPSIS ÆTHIOPS.—(Plate CVII., Fig. 13.)—Expands 9 lines; fore wings black, and slightly glossy, with three minute tufts of jet-black elevated scales on the disk, near the middle of the wings, the first and third nearest the inner margin; hind wings pale blackish. Near Manchester, Mr. Edleston. Described from Mr. Bentley's cabinet. [I presume this species to be identical with the insect mentioned in Mr. Edleston's communication to the "Zoologist," p. 734, as A. aterrima, of Dale MS., a new species, captured near Manchester, on the 12th May; glossy black, and of the same size as A. longicornis.]

SPECIES 54.—ANACAMPSIS FUSCIPENNIS[f].—(Haworth MS., and our Plate CVII., Fig. next below A. Æthiops.)—Expands 5 lines; fore wings fulvous-brown, glossy, paler at the base; marked near the apex of the costa (which is dilated) with three or four slender, oblique, silvery-white lineolæ, the first most distinct, running towards the middle of the apical margin; the others shorter, and extending in the opposite direction; head and thorax white, with a golden tinge. Obtained from the broom, in Epping Forest, in August. Described from Mr. Bentley's cabinet.

[f] SYNONYMES.—*Cleodora cytisella*, Curtis, Brit. Ent. *G. Walkeriella*, Douglas, in Trans. Ent. Soc., Lond., N. S. i. 21, 247.

SPECIES 55.—ANACAMPSIS COSTELLA.—(Stephens MS., and our Plate CVII., Fig. 15.)—Expands 6 lines; fore wings fulvous-buff, with a few brown scales on the inner margin towards the base; a large blackish-brown patch, occupying the middle portion of the costa, and running half-way across the wing; near the apex is a transverse series of blackish scales, and the margin itself is marked with black scales; hind wings pale grey. Taken at Camberwell, by the late Mr. F. J. Stephens. Described from Mr. Bentley's collection.

DESCRIPTION OF PLATE CVIII.

INSECTS.—Fig. 1. Lophonotus fasciculellus (the prominent Tinea).
„ Fig. 2. Acria emarginella (the notch-winged).
„ Fig. 3. Chelaria rhomboidella (the lobster clawed).
„ Fig. 4. Cleodora silacella (the dingy straw).
„ Fig. 5. Cleodora rufescens (the dwarf wainscot).
„ Fig. 6. Cleodora nebulea (the clouded wainscot).
„ Fig. 7. Cleodora ochroleucella (the pale ochreous wainscot).
„ Fig. 8. Cleodora lucidella (the lucid wainscot).
„ Fig. 9. Cleodora falciformis (the hook-tipped).
, Fig. 10. Acompsis unitella (the brown gold).
„ Fig. 11. Acompsis cinerella (the ash-coloured).
INSECTS.—Fig. 12. Acompsis tinctella (the tinted).
„ Fig. 13. Marochila fasciella (the long-winged).
„ Fig. 14. Macrochila parenthesella (the parenthesis).
„ Fig. 15. Macrochila marginella (the white-bordered).
„ Fig. 16 Macrochila bicostella (the light streak).
PLANT. — Fig. 17. Gentiana amarella (bitter Gentian).

All the insects figured in this plate are from the collection of Mr. Bentley, except Acria emarginella, Cleodora nebulea, ochroleucella, and lucidella, from Wood.

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LOPHONOTUS, Stephens.

The fore wings in this genus are very narrow, subfalcate at the tip, and with the inner margin three-fasciculated, as in the prominent moths; the hind wings are narrow, very acute, and with very long fringe; the labial palpi are slender, divergent, and bent upwards in front of the eyes; the maxillary palpi are short.

Species 1.—Lophonotus fasciculellus.—(Stephens, Ill. H., pl. 39, fig. 1; Wood, fig. 1234; and our Plate CVIII., Fig. 1.)—Expands 6½ lines; fore wings ashy-brown, irrorated with black and buff scales, with an indistinct blackish fascia near the middle, widest on the costa, beyond which is a series of black lines, interrupted with white; the apical portion of the wing tinged with reddish, and the inner margin with three tufts of reddish scales, tipped with black; hind wings grey-brown; legs with pale rings. Whittlesea Mere, July; very rare.

ACRIA, Stephens.

The fore wings are rather long, linear, and with a circular notch on the middle of the costa; the apex dilated and rounded, and the palpi apparently short and divergent. Mr. Stephens thinks Donovan's figure and description (on which alone the genus and species are established, the specimen being lost) were made from an injured insect.

Species 1.—Acria emarginella.—(Donovan, xi., pl. 392, fig. 3; Wood, fig. 1260; and our Plate CVIII., Fig. 2.)—Expands 6 (?) lines; fore wings linear, ashy-grey, with the apex striped with brown. Found in Kent.

CHELARIA, Haworth. (HYPATIMA, Hübner.)

This genus is named from the very long, recurved, divaricating palpi, of which the apical joint is long and incurved, the basal part being clothed with scales longest above, leaving the tip nearly naked; the fore wings are long, narrow, and rather lanceolate, and the lower ones acute at the tips.

Species 1.—Chelaria rhomboidella[5].—(Linnæus, etc.; Curtis, pl. 368; Wood, fig. 1235; and our Plate CVIII., Fig. 3.)—Expands from 6 to 8 lines; fore wings dirty ochre, slightly irrorated with dusky scales, with a large, subtriangular, brown spot near the middle of the costa; with two minute dots near the base of the costa, and four or five paler ones near the apex, and with a blackish streak and two dots towards the centre. August, in gardens; widely dispersed.

[5] Synonymes.—*Tinea conscriptella*, Hübner; Haworth.
Tinea Hübnerella, Donovan, xi., fol, 382, fig. 2.

CLEODORA, Stephens.

The palpi are long, curved, porrected horizontally, and divergent; the second joint as long as the fourth, which is not squamose at the base; the fore wings are long and narrow; the fringe very long at the anal angle, and also continued round the apex; the hind wings have the apex suddenly narrowed.

Species 1.—Cleodora silacella.—(Hübner, etc.; Wood, fig. 1236; and our Plate CVIII., Fig. 4.)—Expands from 7 to 9 lines; fore wings ochreous-ashy, with two very minute, remote, brown dots on the disk, one succeeding the other, the inner margin often paler; hind wings brown, shining. Near London, and in the New Forest, about the end of July. The caterpillar feeds on the willow.

Species 2.—Cleodora rufescens.—(Haworth; Wood, fig. 1237; and our Plate CVIII., Fig. 5.)—Measures 7½ lines in expanse; fore wings shorter than in C. silacea, and more obtuse, or rather subtruncate, rufescent, and immaculate; hind wings obtuse, brownish-buff, with yellowish fringe. Near London and in the New Forest, in August.

Species 3.—Cleodora nebulella.—(Stephens; Wood, fig. 1238; and our Plate CVIII., Fig. 6.)—Expands about ½ an inch; fore wings "pale greyish-brown, glossy, with darker or brownish clouds, and a somewhat triangular whitish spot on the costa towards the apex; hind wings very slender, ashy-brown, shining, with darker cilia." July, near Ripley, and in the New Forest.

Species 4.—Cleodora ochroleucella.—(Stephens; Wood, fig. 1239; and our Plate CVIII., Fig. 6.)—Expands ½ an inch; fore wings glossy whitish-ochre, obscurely clouded; hind wings brownish. End of July, near Ripley. Mr. Stephens.

Species 5.—Cleodora lucidella.—(Stephens; Wood, fig. 1240; and our Plate CVIII., Fig. 7.)—Expands 7 lines; fore wings with the tip subacute, shining grey-brown, immaculate; hind wings shining black; fringe brown. July, New Forest.

Species 6.—Cleodora falciformis.—(Haworth; Wood, fig. 1241; and our Plate CVIII., Fig. 9.)—Expands ½ an inch; fore wings subfalcate, ashy, or greyish, with brownish lineolæ, or striolæ somewhat confluent on the disk; fringe umber; hind wings brown-leaden coloured, and glossy. July and August, in Norfolk and near London.

ACOMPSIA, Hübner, Stephens.

The palpi are long, slender, and recurved, with the terminal joint very long and acute, the head small and glossy, the fore wings acutely truncate along the apical margin; the disk destitute of markings, and of an uniform colour, and the hind wings broad, and not attenuated at the outer angle, as in the last group.

Species 1.—Acompsia unitella[h].—Hübner, etc.; Wood, fig. 1243; and our Plate CVIII., Fig. 10.)—Expands from 4 to 7 lines; fore wings clear fulvous-brown, or snuff coloured, immaculate, with fringe of the same colour; hind wings blackish; head ochre-yellow. The caterpillar feeds on the apple and pear. Near London, from June to August.

[h] Synonyme.—*Tinea fusco-aurella*, Haworth (?).

Species 2.—Acompsia cinerella.—(Hübner, etc.; Wood, fig. 1242; and our Plate CVIII., Fig. 11.)—Expands 8 to 9½ lines; fore wings pale ashy-brown and immaculate, with rather paler fringe; hind wings rather darker, with yellowish fringe; head glossy ash-brown. Darenth Wood, Kent, beginning of July.

Species 3.—Acompsia tinctella.—(Hübner, etc.; Wood, fig. 1244; and our Plate CVIII., Fig. 12.)—Expands 6 or 7 lines; fore wings ochre-yellow, shining, almost immaculate; hind wings yellowish-white, with paler fringe; head pale ochre. Darenth Wood, end of June. Mr. Stephens.

MACROCHILA, Stephens. APLOTA, pars Curtis.

The palpi are very long, porrected, and densely squamose, with the second joint very long, the scales forming a brush at the apex, and the third joint very slender and acute, appearing beyond the brush like a

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terminal bristle; the fore wings are entire, ample, elongate, somewhat linear, with the apical margin somewhat obliquely truncate, and the disk obscurely varied with darker markings; when at rest they are convoluted or decumbent.

SPECIES 1.—MACROCHILA FASCIELLA.—(Hübner, etc.; Wood, fig. 1245; and our Plate CVIII., Fig. 13.—Expands 10 or 11 lines; fore wings elongate, dull, testaceous, or red, with two nearly obsolete darker fasciæ, one nearly central, the other subapical and outwardly bent into a right angle; between these is a dusky dot; the hind wings brown, with paler fringe. Near London, Darenth Wood, and New Forest, in June and July, but rare.

SPECIES 2.—MACROCHILA PARENTHESELLA[i].—(Linnæus, etc.; Wood, fig. 1246; and our Plate CVIII., Fig. 14.)—Expands 8 or 9 lines; fore wings subtestaceous, or brownish-grey, the costa with a narrow longitudinal streak from the base to the middle, so that when the wings are closed, the insect looks, as Linnæus says, like a short dark line, with a white edge on each side, the disk occasionally with two obscure dark dots; hind wings brown; head whitish. End of July, near Blackheath and the neighbouring parts of Kent.

[i] SYNONYME.—*Tinea Rostrella*, Hübner.

SPECIES 3.—MACROCHILA MARGINELLA.—(Fabricius, etc.; Donovan, pl. 58, fig. 2; Wood, fig. 1247; and our Plate CVIII., Fig. 15.)—Expands 7 lines; fore wings obscure ashy-brown, or testaceous and shining, the costal and inner margins broadly snow-white; hind wings whitish; head snow-white. July, in various parts of Kent where the juniper grows.

[j] SYNONYMES.—*Tinea striatella*, Hübner.
Palpula clarella, Treitschke.

SPECIES 4.—MACROCHILA BICOSTELLA.—(Linnæus, etc.; Wood, fig. 1248; and our Plate CVIII., Fig. 16.)—Expands 9 or 10 lines; fore wings lanceolate, ashy-buff, the costal margin with a white edge, behind which runs a brown rather broad streak, and with two or three minute dark dots on the disk in the middle; hind wings whitish; palpi brown. Taken in various parts of the south of England, Kent, Hampshire, Dorsetshire, etc., in June.

DESCRIPTION OF PLATE CIX.

INSECTS.—Fig. 1. Aplota palpella (the dingy streak).
„ Fig. 2. Macrochila Robertsonella (the Robertsonian).
„ Fig. 3. Enicostoma Thunbergana (the Thunbergian).
„ Fig. 4. Alabonia Geoffroyella (the Geoffroyian).
„ Fig. 5. Œcophora Oliviella (the Oliverian).
„ Fig. 6. Œcophora sulphurella (the yellow underwing).
„ Fig. 7. Adela Latreillella (the Latreillian).
„ Fig. 8. Adela Sulzella (the Sulzian).
„ Fig. 9. Adela Degeerella (the Degeerian).
„ Fig. 10. Adela fasciella (the copper japan).
„ Fig. 11. Adela cuprella (the scabious long-horn).
INSECTS.—Fig. 12. Adela viridella (the green long-horn).
„ Fig. 13. Adela Frischella (the Frischian).
„ Fig. 14. Adela Swammerdamella (the Swammerdamian).
„ Fig. 15. Adela Panzerella (the Panzerian).
„ Fig. 16. Adela Robertella (the pale brown long-horn).
PLANT.—Fig. 17. The Rock Cress.

The larva and chrysalis of A. Degeerella will be found figured in Plate III.

The whole of these insects are from the cabinet of Mr. Bentley.

SPECIES 5.—MACROCHILA ROBERTSONELLA.—(Curtis, pl. 655, and our Plate CIX., Fig. 2.)—Expands 7 lines; fore wings lighter or darker grey, slightly ochreous and freckled with pale brown, the costa obliquely marked with short brown lines; the apex and posterior margin with three fine brown lines, and a few black dots on the disk. Taken among furze-bushes at Wanstead Flats, in July

APLOTA, Stephens.

Mr. Stephens has separated the present genus from the preceding, on account of wanting the bristle-like appendage towards the apex of the palpi, which are elongate, diverging, clavate, compressed, and densely clothed with scales, nearly concealing the terminal joint; the fore wings are somewhat linear, with the apical margin obliquely truncate, and the disk plain and dingy.

Species 1.—Aplota palpella.—(Haworth, etc.; Wood, fig. 1249; and our Plate CIX., Fig. 1.)—Expands about ½ an inch; fore wings brown, with a slight golden tinge produced by fine golden scales, with a double black dot before and another larger beyond the middle; inner margin with a paler streak; hind wings and fringe blackish. July, near Ripley.

ENICOSTOMA, Stephens.

The palpi are very long, recurved, and clavate, with the tip of the terminal joint exposed and naked; the fore wings broadly sublanceolate, with several raised tufts of scales on the disk; they are of dark colours, and not varied with metallic tints, as in the following groups.

Species 1.—Enicostoma Thunbergana[k].—(Fabricius, etc.; Wood, fig. 1250; and our Plate CIX., Fig. 3.)—Expands 8 or 9 lines; fore wings obscure ashy-brown, with two black tufts of scales on the disk before, and two smaller beyond the middle, occasionally obsolete; hind wings rather paler. Gardens near London, and in Devonshire, in June.

[k] Synonyme.—*Tinea lobella*, Hübner.

ALABONIA, Hübner. ENICOSTOMA, pars Stephens (Cat).

The palpi nearly equal the body in length, and are very divergent, with the terminal joint very slender and acute; the fore wings rather broadly lanceolate, ornamented with bright and metallic tints, and the antennæ are of moderate length.

Species 1.—Alabonia Geoffroyella.—(Linnæus, etc.; Wood, fig. 1251; and our Plate CIX., Fig. 4.)—Expands from 8 to 10½ lines; basal portion of the fore wings golden-yellow shaded to ochre to the apical part, which is orange-brown; the base with two silvery longitudinal streaks, the anterior deflexed at its extremity, and with a third silvery oblique streak arising near the middle of the costal; beyond the middle are two large triangular whitish spots placed on the opposite margins of the wing; hind wings brown. Common in woods and hedges, about the beginning of June.

ŒCOPHORA, Latreille. DASYCERA, Haworth.

The palpi are longer than the head and recurved, with the terminal joint very slender, and naked; the antennæ of moderate length, with the base stout, being pilose beneath as far as the middle, beyond which they have a pale-coloured ring; the fore wings are very much deflexed when at rest, long, and rather narrow, and handsomely variegated with yellow markings. The species fly by day.

Species 1.—Œcophora oliviella[l].—(Fabricius; Wood, fig. 1253; and our Plate CIX., Fig. 5.)—Expands 6 to 8 lines; fore wings black, with a golden tinge; the base with a triangular yellow spot, and a

transverse nearly central fascia of the same colour, behind which, as well as the spot, is a silvery streak; hind wings black. Common on palings and hedges, in June and July.

[l] SYNONYME.—*Tinea Œmulella*, Hübner.

SPECIES 2.—ŒCOPHORA SULPHURELLA[m].—(Fabricius; Curtis, pl. 408; Wood, fig. 1252*; and our Plate CIX., Fig. 6.)—Expands 6½ to 8 lines. *Male*, fore wings brown, with golden irrorations, with a yellow stripe on the costa, and sometimes an obscure one along the middle, and a triangular yellow spot near the anal angle. *Female*, fore wings bluish-black, irrorated with golden scales, with the two yellow basal streaks more conspicuous, and two triangular yellow spots on the opposite margin; hind wings in both sexes yellow, tipped with brown. I have reared this insect from the caterpillar, which is a dirty, fleshy-coloured, naked grub, with a few short hairs scattered about the body, and which has the power of walking about as quickly backwards as forwards; it forms a web as a covering, which is filled with excrement and bits of gnawed wood, and feeds under the bark of decayed damp stumps of trees in the winter, and the moth appears in the spring and is common in gardens, hedges, etc.

[m] SYNONYMES.—*Tinea orbonella*, Hübner (male). *Alucita flavella*, Fabricius (female).
Tinea cornuiella, Fabricius (female).

ADELA, LATREILLE. CAPILLARIA, HAWORTH.

The antennæ are of an extraordinary length in this group, particularly in the males, which have some of the joints at the base dilated and setose; the head is small and hairy, with the eyes large in the males, and the palpi slender and curved upwards, and hairy; the fore wings metallic, and, when at rest, much deflexed at the sides of the body. The species fly in swarms in the sunshine, in open spaces in woods. The caterpillars reside in moveable cases, and the chrysalis is enclosed in a loose elongated web, spun between the leaves.

A. Species with metallic wings:—

SPECIES 1.—ADELA LATREILLELLA.—(Hübner; Wood, fig. 1254; and our Plate CIX., Fig. 7.)—Expands 3¼ to 4½ lines; fore wings golden-brown, with a very short, indistinct, whitish, interrupted fascia on the inner margin near the anal angle; hind wings brassy-black. Taken in July, in the north of England.

SPECIES 2.—ADELA SULTZELLA[n].—(Linnæus, etc.; Wood, fig 1255; and our Plate CIX., Fig. 8.)—Expands from 5½ to 7 lines; fore wings brassy-black, obscurely streaked with yellowish radiating marks, with a nearly central, transverse, yellow bar, edged on each side with purple-copper; hind wings brownish-brass. Taken in hedges and woods around London, New Forest, Devonshire, Suffolk.

[n] SYNONYME.—*Phalæna Tinea Podœella*, Linnæus; Donovan, viii., pl. 267, fig. 3 (female?).

SPECIES 3.—ADELA DEGEERELLA[o].—(Linnæus, etc.; Donovan, viii., pl. 267, figs. 1, 2; Westwood, Ent. Text Book, pl. 5, fig. 6; Wood, fig. 1256; and our Plate CIX., Fig. 9.)—Expands from 7 to 8½ lines; fore wings brown, with longitudinal, golden, radiating streaks, and with a transverse yellow fascia beyond the middle, bordered with black and silver; hind wings dusky-brass, with a slight purple tinge. Common in June, and widely dispersed. The transformation of this species was observed by Lyonnet (Rech. Post., pl. 19). The larva inhabits a flattened case formed of bits of leaves, and the chrysalis is remarkable in having the greatly elongated antennæ coiled up in a roll at the extremity of the abdomen. See my Introd. to Mod. Class. of Ins., 2, pl. 405, figs. 112, 10, 11, 12, 13, for copies of Lyonnet's figures.

[o] SYNONYME.—*Alucita striatella*, Fabricius.

* Wood has unfortunately transposed the names of the two species of this genus.

SPECIES 4.—ADELA FASCIELLA[p].—(Fabricius, etc.; Wood, fig. 1257; and our Plate CIX., Fig. 10.)—Expands 7 or 8 lines; fore wings golden-copper, with an indistinct blackish bar across the middle; hind wings purplish-gold. The female has shorter antennæ and a ferruginous head, that of the male being black. Taken in June and July, and widely dispersed, though not common.

[p] SYNONYME.—*Tinea Schiffermyllerella*, Hübner (?).

SPECIES 5.—ADELA CUPRELLA[q].—(Haworth, etc.; Wood, fig. 1258; and our Plate CIX., Fig. 11.)—Measures 5 or 6 lines in expanse; fore wings, with the fringe of all the wings shining, golden-copper; hind wings blackish-purple; head red. Taken in Devonshire, in June.

[q] SYNONYMES.—*Tinea viridella*, Hübner (?).
Tinea scabiosella, Stephens.*

SPECIES 6.—ADELA VIRIDELLA[r].—(Fabricius, etc.; Wood, fig. 1261; and our Plate CIX., Fig. 12.)—Expands 6 or 7 lines; fore wings golden-green, and very glossy; hind wings purple-brown, with golden-green fringe; head black, the female with the forehead reddish. Very common in hedges and woods, in May.

[r] SYNONYME.—*Tinea sphingiella*, Hübner.

SPECIES 7.—ADELA FRISCHELLA.—(Linnæus; Curtis, pl. 463; Wood, fig. 1262; and our Plate CIX., Fig. 13.)—Expands from 8 to 10 lines; fore wings shining golden-brown, with a purplish tinge on the costa and fringe, and an indistinct, ovate, paler spot towards the apex, dotted with black; the antennæ are rather longer in the males than in the females, and silvery or white, with the base brown; hind wings yellowish-crimson; fringe brown, with the base golden. Taken in May and July, in Kent, Dorsetshire, and other parts of the south of England.

B. Species with the wings destitute of metallic gloss :—

SPECIES 8.—ADELA SWAMMERDAMELLA.—(Linnæus, etc.; Wood, fig, 1263; and our Plate CIX., Fig. 14.)—Expands 9 or 10 lines; fore wings livid-flavescent and immaculated; hind ones rather darker; antennæ very long and whitish. Taken in May and June, in woods, flying in swarms up and down like gnats.

SPECIES 9.—ADELA PANZERELLA.—(Fabricius, etc.; Wood, fig. 1264; and our Plate CIX., Fig. 15.)—Expands 7½ lines; fore wings pale ochre-yellow, very delicately reticulated with brown, the striæ scarcely visible to the naked eye; the head fulvous; antennæ white. Beginning of June, in chalky districts.

SPECIES 10.—ADELA ROBERTELLA[s].—(Linnæus; Wood, fig. 1265; and our Plate CIX., Fig. 16.)—Expands 8 lines; fore wings pale brownish and immaculate; hind ones ashy-brown; antennæ white, with the base yellowish. Beginning of June, in chalky places near Hertford, and Cottingham, Yorkshire.

[s] SYNONYME.—*Alucita Pilella*, Fabricius; Hübner; Haworth.

* Mr. Curtis gives the name of A. scabiosella to this species, and states that Mr. Dale possesses a species new to Britain, which *he thinks* will prove to be the A. cuprella, Fabricius, whose description is, however, too short to permit this to be determined. The Phalæna Tinea Reaumurella of Linnæus (Wood, fig. 1259) is suggested by Mr. Stephens to be the male of this species. It measures about 5 lines in expanse; and has the fore wings golden-green and shining, and the hind ones dark purple, with golden-green fringe, with the male antennæ not twice the length of the wings. Mr. Curtis, on the contrary, thinks Reaumurella is the female of A. viridella.

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DESCRIPTION OF PLATE CX.

INSECTS.—Fig. 1. Cochleophasia tessellea (the pale tessellated brown).
" Fig. 2. The Female.
" Fig. 3. Cochleophasia pubicornis (the pale downy horned).
" Fig. 4. Oporinia tortricella (the pale chequered).
" Fig. 5. Oporinia nubilea (the clouded brown).
" Fig. 6. Oxypate gelatella (the autumnal dagger).
" Fig. 7. Dasystoma salicella (the rosy day).
" Fig. 8. Cheimophila Phryganella (the drab day).
" Fig. 9. Diurnea Fagella (the March dagger).
" Fig. 10. A large variety.
" Fig. 11. Female.
" Fig. 12. Diurnea Novembris (the November dagger).
" Fig. 13. Semioscopis Avellanella (the hazel).
" Fig. 14. Semioscopis Steinkelnerana (the Steinkelnerian).
" Fig. 15. Anesychia Echiella (the bordered Ermine).
" Fig. 16. Anesychia pusiella (the beautiful Ermine).
INSECTS.—Fig. 17. Anesychia dodecea (the scarce Ermine).
" Fig. 18. Anesychia funerella (the Funereal).
" Fig. 19. Anesychia cristella.
" Fig. 20. Yponomeuta Evonymella (the full-spotted Ermine).
" Fig. 21. Yponomeuta irrorella (the Surrey Ermine).
" Fig. 22. Yponomeuta cognatella (the allied Ermine).
" Fig. 23. Yponomeuta rosella (the few-spotted Ermine).
" Fig. 24. Yponomeuta padella (the common Ermine).
" Fig. 25. Yponomeuta plumbella (the Kent Ermine).

The larvæ of Gelatella, Plumbella, Padella, Echiella, and Fagella are figured in Plate CXI.

The moths, with the exception of 3, 15, 16, and 18, are from the cabinet of Mr. Bentley.

COCHLEOPHASIA, CURTIS.

The palpi are short and deflexed, conposed of three nearly equal joints; the head very woolly; the antennæ of moderate length; the wings in the male rather large and obtuse, destitute of metallic gloss, with the disk more or less tessellated. The female is short and thick, and entirely destitute of wings, with the two last joints but one of the body very woolly; the caterpillars reside in long cylindric cases, which they bear about with them, and within which they change to pupæ.

SPECIES 1.—COCHLEOPHASIA TESSELLEA.—(Haworth; Curtis, pl. 487; Wood, fig. 1266; and our Plate CX., Figs. 1, 2.)—The male expands from 7 to 8½ lines; and has the fore wings brown, shining, and more or less mottled with ochre; head bright ochre. The female is pitchy, with a tuft of greyish wool near the extremity of the body. Taken about the beginning of June, in various localities.

SPECIES 2.—COCHLEOPHASIA PUBICORNIS.—(Haworth; Wood, fig. 1167; and our Plate CX., Fig. 3.)—Expands about 8 lines; fore wings very pale ochre-brown, immaculate; hind wings pale brown; head yellow; antennæ pubescent, of the length of the body. Near London, New Forest, etc.

OPORINIA, HÜBNER, STEPHENS.

The palpi are very short, and slightly deflexed; the antennæ rather stout at the base; the wings glossy, slightly recumbent when at rest; the fore wings long, smooth, dusky coloured, with darker markings, the centre ones formed of elevated scales, and the females furnished with fully-developed wings.

SPECIES 1.—OPORINIA TORTRICELLA.—(Hübner, etc.; Wood, fig. 1268; and our Plate CX., Fig. 4.)—Expands 9 or 10 lines; fore wings obscure, leaden-ashy, with a short brown fascia near the base, and a second beyond the middle placed a little obliquely inwards; apical portion fuscous, with darker clouds. Taken in oak woods, early in the spring.

SPECIES 2.—OPORINIA NUBILEA.—(Haworth, etc.; Wood, fig. 1269; and our Plate CX., Fig. 5.)—Expands 10 lines; fore wings hoary, more or less clouded with ferruginous-brown, and with a short, narrow, rusty fascia towards the base, and a second broader, a little beyond the middle, varying in depth of colour; apical portion ashy, clouded with rusty-brown. Taken early in the spring, in woods.

OXYPATE, Hübner, Stephens. CHEIMAPHASIA, Curtis (Ent. Mag.)

The palpi are very short, dependent, and scarcely pilose; the antennæ pubescent beneath, in the males; the fore wings in the males are slightly decumbent, very much narrowed at the base, with the costa straight, the disk smooth and glossy, with two dark dots on the disk; and the female has very minute wings, the tips of which are pilose.

Species 1.—Oxypate gelatella.—(Linnæus, etc.; Wood, fig. 1270; and our Plate CX., Fig. 6.)—The male expands from 7 to 9 lines; ashy-brown, with a whitish faint streak in the middle of the disk, with a black dot at each end; hind wings immaculate. The rudimental wings of the female exhibit the two black dots. Taken in December, in Hertfordshire, Hampshire, etc.

DASYSTOMA, Curtis (Ent. Mag.)

The palpi in the males are densely hairy; the antennæ distinctly ciliated beneath; the head broad and hairy; the fore wings with the costa arched, with several veins distended. The female with the wings about half the length of the body.

Species 1.—Dasystoma salicella.—(Hübner, etc.; Wood, fig. 1271; and our Plate CX., Fig. 7.)—Expands 8 or 9 lines, fore wings purplish-brown, with the costa and an irregular patch from the base to beyond the middle rosy, the latter divided by a slightly dusky fascia before and another beyond the middle, abbreviated towards the inner margin; hind wings brown. Taken in woods, in the autumn, but not common.

CHEIMOPHILA, Hübner.

The palpi are rather long, slender, and recurved; the antennæ rather long and pubescent in the males; the spiral tongue, as in several of the allied groups, is obsolete; the wings smooth, glossy, and only marked with two dots, placed transversely near the tips, and the females are broad and almost destitute of wings.

Species 1.—Cheimophila Phryganella[t].—(Hübner, etc.; Wood, fig. 1272; and our Plate CX., Fig. 8.)—Expands from 10 to nearly 12 lines; fore wings obscure, testaceous, and occasionally with a longitudinal, interrupted, almost obsolete, pale streak, terminating in two dark dots, placed transversely. Taken in woods, about the end of October. [Diurnea Novembris, described in the next page, is stated by Mr. Edleston to be the female of this species.]

[t] *Phalæna Tinea Lichenella*, Linnæus (?).
Geometra apteraria, Haworth.

DIURNEA, Haworth.

The palpi are rather large, porrected obliquely, and thickly squamose, those of the females being rather longer and stouter. The antennæ of the males densely pilose; the wings in the male partially lying over each other, horizontally, in repose, and very long; those of the females being shorter and acute at the tips; the disk pale, with dark irregular markings, like letters. The perfect insects appear in the late autumnal or early spring months.

Species 1.—Diurnea Fagella.—(Fabricius; Albin, pl. 36, fig. 57 a—e; Wood, fig. 1273; and our Plate CX., Figs. 9, 10, 11.)—Expands from 10 to 13 lines (male), or 6 or 7 lines (female); fore wings whitish-buff,

varying to dark ashy, very much irrorated with dusky atoms, and with small, irregular, black marks, having an abbreviated transverse streak near the base, followed by one or more black dots, another dark streak from the costa beyond the middle of the wing, and another near the apex, these being more or less obsolete. The caterpillar feeds on the aspen, and other trees; and the moth appears in March, and is found on the trunks of trees.

SPECIES 2.—DIURNEA NOVEMBRIS.—(Haworth; Curtis, pl. 743; Wood, fig. 1274; and our Plate CX., Fig. 12)—The female expands 7 or 8 lines; fore wings pale brown, with white patches and scattered scales, and a longitudinaal, undulating line of white from near the base to the apical margin, edged interruptedly with black. Male unknown. Found on the trunks of limes in various places round London, in November. [Stated by Mr. Edleston (Entomologist, p. 229) to be the female of Cheimophila phryganella, described in the preceding page.]

SEMIOSCOPIS, HÜBNER. EPIGRAPHIA, STEPHENS (CATAL.)

The palpi are elongate, slender, and recurved, with the tip acute; the antennæ of the males pubescent; the wings decumbent in repose; the anterior longish, and lanceolate, of pale colours with darker letter-like markings; the females are winged, but in general smaller than the males.

SPECIES 1.—SEMIOSCOPIS AVELLANELLA.—(Hübner, etc.; Wood, fig. 1275; and our Plate CX., Fig. 13.)—Expands from 11 to 13 lines; fore wings whitish-buff varying to ashy, with darker irrorations, and a ramose-longitudinal, black streak more or less interrupted, and with some black or dusky dots at the extremity of the costa and along the apical margin; rare. Taken in the Kentish woods, in the autumn.

SPECIES 2.—SEMIOSCOPIS STEINKELNERANA[u].—(Fabricius, etc.; Wood, fig. 1276, and our Plate CX., Fig. 14.)—Expands 9½ to 11 lines; fore wings ashy-brown, with a flexuous black streak on the disk, more or less interrupted, and with a few brownish dots; the apical margin also with a row of black dots; hind wings dark ash. Taken in hedges and woods, at the end of March.

[u] SYNONYME.—*Tinea characterella*, Hübner.

ANESYCHIA, HÜBNER, STEPHENS.

The palpi are long, slender, and curved upwards in front of the eyes, and slightly incurved, with the third joint very slender and acute; the antennæ are simple and setaceous in both sexes; the fore wings linear-lanceolate, somewhat obliquely truncate on the apical margin, with the disk white or pale coloured, and marked with large black blotches. The caterpillars do not reside in communities; they are slightly pubescent, longitudinally streaked with different colours, and the chrysalis is enclosed within an ovate-form cocoon.

SPECIES 1.—ANESYCHIA ECHIELLA[v].—(Wien. Verz., etc.; Wood, fig. 1278; Curtis, Brit. Ent., Plate 412*; and our Plate CX., Fig. 16, and CXI., h.)—Expands 12 or 13 lines; fore wings with the costal half mouse coloured, except at the tip; deeper along the middle of the wing, and emitting three black spots on the disk; the extremity of the costa and apical margin, as well as the thorax, dotted with black; inner part of the wing cream coloured. Taken near Aylesbury and Dover, in June, but very scarce.

[v] SYNONYME.—*Alucita bipunctella*, Fabricius.

SPECIES 2.—ANESYCHIA PUSIELLA[w].—(Linnæus, etc.; Stephens, pl. 39, fig. 3; Curtis, Brit. Ent., pl. 412, fig. **; Wood, fig. 1277*; and our Plate CX., Fig. 15.)—Expands from 13 to 15 lines; fore wings cream

coloured; along the middle of the wing runs a black dash, sinuated on each side, terminating in an irregular oblique patch; the apex of the costa and apical margin with a row of small black dots; thorax dotted with black. Taken near Darenth Wood and Gravesend, in June, but extremely rare*.

[w] Synonyme.—*Tinea lithospermella*, Hübner.

Species 3.—Anesychia dodecea[x].—(Haworth, etc.; Wood, fig. 1279; and our Plate CX., Fig. 17.)—Expands 7½ to 10½ lines; fore wings leaden-whitish, with about twelve rather large, irregular, black spots, the largest of which are placed beyond the middle of the wing. Beaten from fir-trees at Birch Wood and Coombe, in June, but very rare.

[x] Synonyme.—*Tinea decemguttella*, Hübner.

Species 4.—Anesychia funerella.—(Fabricius (?); Haworth; Wood, fig. 1280; and our Plate CX., Fig. 18.)—Expands ¾ of an inch; fore wings white, with two black spots at the base of the costa, and two on the opposite side; the middle of the wing occupied by a large black blotch, connected by a narrow isthmus with the apex of the wing, which is also black. Taken at Clifton, near Bristol, by Captain Blomer.

Species 5.—Anesychia cristella.—(Hübner, and our Plate CX., Fig. 19.)—Expands 8 lines; head, middle of thorax, and fore wings cream-white; the latter with the costa pale brown from the base beyond the middle, with a short dark dash in the middle at the base; a very oblique row of dark dots in the middle, followed by a large, dark, slender mark, resembling the Greek letter Ω reversed, and placed rather obliquely; apex of the wings with a row of minute dark dots; hind wings pale brown. Described from Mr. Bentley's cabinet, and obtained by him from that of Mr. Stone.

YPONOMEUTA, Fabricius. ERMINEA, Haworth. NYGMIA, Hübner.

The palpi are porrected nearly horizontally, covered equally with scales; the antennæ are long and slender; the wings large, convoluted in repose; the fore ones long and linear, somewhat rounded at the apex, pale, but marked with numerous black dots, and the caterpillars live in society beneath large webs.

Species 1.—Yponomeuta evonymella.—(Linnæus, etc.; Donovan, pl. 355, fig. 4; Wood, fig. 1281; and our Plate CX., Fig. 20.)—Expands from 8 to 12 lines; fore wings snow-white, with about fifty minute black dots arranged in four nearly regular rows; hind wings brown. The caterpillar is ochreous-yellow, living in large communities on the spindle-tree, bird-cherry, and other trees, sometimes completely stripping them of their foliage. The moth appears in July and August, and is very abundant.

Species 2.—Yponomeuta irrorella.—(Hübner, etc.; Wood, fig. 1282; and our Plate CX., Fig. 21.)—Expands 11 or 12 lines; fore wings dirty-white, or tinged with clay-colour, with a large smoke-coloured spot towards the apex; the disk with numerous black dots, placed more irregularly than in the preceding. Taken in June, at Birch and Coombe Woods, but very rare.

Species 3.—Yponomeuta cognatella[y].—(Zinck. g. Somm., etc.; Wood, fig, 1283; and our Plate CX., Fig. 22.)—Expands 10 or 12 lines; fore wings snow-white, each with about twenty black dots, placed wide apart in irregular rows; somewhat confluent in the apical portion of the wing; hind wings silvery-ash. Taken about the beginning of July, in various places round London.

[y] Synonyme.—*Tinea cognatella*, Hübner; Curtis.

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* The names of this and the following species are unfortunately transposed in *Wood's Index Entomologicus*.

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SPECIES 4.—YPONOMEUTA RORELLA.—(Hübner; Albin, pl. 70, fig. a—d; Wood, fig. 1284; and our Plate CX., Fig. 23.)—Expands about 9 lines; fore wings snow-white, with from twenty to thirty small black dots, almost arranged in rows, the apical margin being destitute of the smaller dots; hind wings leaden coloured. This may possibly be a variety of the former, in company with which it is found.

SPECIES 5.—YPONOMEUTA PADELLA[z].—(Fabricius, etc.; Wood, fig. 1285; and our Plate CX., Fig. 24, and CXI., g.)—Measures from 10 to 12 lines; fore wings white, livid or leaden coloured, with about thirty minute black dots wide apart, and arranged in rows towards the base of the wings, but irregular beyond the middle; those towards the apical margin in transverse series; hind wings leaden coloured. Caterpillar dirty-ash, dotted with black; it feeds on the whitethorn and apple, living gregariously in a common web, and defoliating the trees sometimes to a vast extent, as described in my article upon its habits, in "Loudon's Gardeners' Magazine," vol. xiii., p. 133.

[z] SYNONYME.—*Phalæna evonymella*, Donovan, pl. 9; Wilkes, pl. 5; Harris, Aurelian, pl. 3, fig. k—m.

SPECIES 6.—YPONOMEUTA PLUMBELLA.—(Fabricius, etc.; Wood, fig. 1286; and our Plate CX., Fig. 25, and CXI., d.)—Expands 8 or 9 lines; fore wings leaden-white, with numerous small black dots, one of which in the middle is larger than the rest, and brownish; the apex also with a rounded brownish spot; hind wings brown. Taken in July and August, in hedges, in various parts of the south of England, but not common.

DESCRIPTION OF PLATE CXI.

INSECTS.—Fig. 1. Telea Curtisella (the Curtisian).
„ Fig. 2. Telea ambiguella (the small brown bar).
„ Fig. 3. Telea Cratægella (the whitethorn bar).
„ Fig. 4. Telea leucatella (the small white bar).
„ Fig. 5. Telea comptella (the peacock's feather).
„ Fig. 6. Telea lutarella (the muddy ermine).
„ Fig. 7. Telea subfasciella (the slight barred).
„ Fig. 8. Telea cæsiella (the purple edged).
„ Fig. 9. Ederesa semifusca (the long-winged white-back).
„ Fig. 10. Ederesa mendicella (the purple white-back).
„ Fig. 11. Ederesa albistria (the purple white-streak).
„ Fig. 12. Ederesa pruniella (the white-back).
„ Fig. 13. Ederesa tetrapodella (the blotched white-back).
„ Fig. 14. Ederesa semipurpurella (the half purple).
„ Fig. 15. Ederesa curvella (the brindled white-back ermine).
„ Fig. 16 Ederesa clematella (the barred white).
„ Fig. 17. Ederesa ossea (the cream-coloured).
„ Fig. 18. Ederesa ocellea (the eyed white-back).
INSECTS.—Fig. 19. Argyrosetia Gœdartella (the Gœdartian)).
„ Fig. 20. Argyrosetia semifasciella (the short gold-bar).
„ Fig. 21. Argyrosetia Brockella (the gold IW).
„ Fig. 22. Argyrosetia literella (the Greek-lettered gold).
„ Fig. 23. Argyrosetia aurivitella (the golden riband).
„ Fig. 24. Argyrosetia aurifasciella (the gold-banded).
„ Fig. 25. Argyrosetia IV-ella (the gold IV).
„ Fig. i. Yponomeuta sedella.

The larvæ distinguished by letters belong to insects figured in Plates CIX. and CX.

a, the caterpillar of Degeerella, in Plate CIX; *b*, the cocoon; *c*, the chrysalis; *d*, the cat. of plumbella, in Plate CX.; *e*, the cat. of Gelatella, in Plate CX.; *f*, the cat. of Fagella, in Plate CX.; *g*, the cat. of Padella, in Plate CX.; *h*, the cat. of Echiella, in Plate CX.

The insects figured in this plate, with the exception of 7, 13, 22, 23, and 24, from Wood's Index, are from the cabinet of Mr. Bentley. The caterpillars are from Hübner and Fischer.

SPECIES 7.—YPONOMEUTA SEDELLA.—(Hübner; Imhoff; and our Plate CXI., Fig. i.)—Expands 8 or 9 lines; fore wings of a pale bluish-grey, with a few black dots arranged in rows; the apical portion clear, except a short, transverse, black streak near the apical margin. The caterpillar is greyish-white, with the sides yellow, and the segments dotted with black. It feeds on Sedum telephium. The perfect insect was taken by J. F. Stephens, Esq., on the wing, on Norbury Hill, Norwood, on the 25th April.

TELEA, STEPHENS.

The palpi in this group are slender and slightly ascending, incurved and divaricating, with the terminal joint long and slender; the antennæ are slender, and alike in both sexes; and the fore wings are convoluted in repose, sublinear; generally of pale colours, with dark transverse fasciæ, or simply coloured, with a darker

roundish patch at the apex. The species are much smaller than the Yponomeutæ, and approach those of the genus Anacampsis.

SPECIES 1.—TELEA CURTISELLA[a].—(Donovan, 2, pl. 65, fig. 4, etc.; Wood, fig. 1287; and our Plate CXI., Fig. 1.)—Expands 8 lines; fore wings snow-white, the base irrorated with brown; the costa, from the base to the middle, black, where it is dilated into an abbreviated trigonate fascia; apical margin snow-white, with some confluent black dots; hind wings leaden-brown; variable in the depth of its colours. Taken in hedges, in June and July.

[a] SYNONYME.—*Tinea cænobitella*, Hübner.

SPECIES 2.—TELEA AMBIGUELLA.—(Hübner, etc.; Wood, fig. 1288; and our Plate CXI., Fig. 2.)—Expands 6 or 7 lines; fore wings yellowish, with a complete broad, dark, central fascia; dilated towards the costa; obscurely dotted with brown; hind wings brownish-white. Very rare; taken in woods, in July.

SPECIES 3.—TELEA CRATÆGELLA.—(Linnæus, etc.; Wood, fig. 1289; and our Plate CXI., Fig. 3.)—Expands from 5 to 7 lines; fore wings whitish, with ashy or brownish clouds, and with two rather broad dusky fasciæ running across the wings, and a third abbreviated at the apex; hind wings ashy-grey. The caterpillar feeds on the whitethorn and pear. Taken in the New Forest and elsewhere, in July.

SPECIES 4.—TELEA LEUCATELLA.—(Linnæus, etc.; Wood, fig. 1290; and our Plate CXI., Fig. 4.)—Expands 6 or 7 lines; fore wings blackish, with two fasciæ; the anterior broad, white, and semi-orbicular; the hinder narrower and more ashy coloured, but minutely dotted with black; the disk with three or four black dots; palpi elongate, and divaricating; antennæ annulated with white. The caterpillar feeds on fruit-trees. The moth is common in gardens, in June.

SPECIES 5.—TELEA COMPTELLA[b].—(Hübner, etc.; Wood, fig. 1291; and our Plate CXI., Fig. 5.)—Expands 6 or 7 lines; fore wings narrow, ashy, obscurely atomose, and with a subocellated rosy-copper spot close to the apex, with a brown iris; hind wings brownish. Taken in hedges and woods, in June.

[b] SYNONYME.—*Phalæna Tinea apiella*, Donovan, 2, pl. 57, fig. 3.

SPECIES 6.—TELEA LUTARELLA.—(Hübner (?); Haworth; Wood, fig. 1292; and our Plate CXI., Fig. 6.)—Expands from 5 to 7 lines; fore wings ashy-clay coloured, with darker, almost obsolete dots, and with a small whitish streak close to the apex of the wing; hind wings pale brown; fringe coppery in certain lights. Taken in woods and gardens, about the end of June, and not uncommon.

SPECIES 7.—TELEA SUBFASCIELLA.—(Stephens; Wood, fig. 1293; and our Plate CXI., Fig. 7.)—Expands 5 or 5½ lines; fore wings "ashy-brown, with darker atoms; the apex with a dusky cloud, and the disk with faint fuscous fasciæ; head pale; thorax fuscous." Darenth Wood, in June.

SPECIES 8.—TELEA CÆSIELLA.—(Hübner; Haworth; Wood, fig. 1294; and our Plate CXI., Fig. 8.)—Expands 5 or 6 lines; fore wings ashy-brown, with dusky atoms; the apical margin and fringe purple; hind wings whitish, brownish behind; head and thorax ashy-white. Common in hedges and woods.

EDERESA, CURTIS. ISMENE, STEPHENS (ILLUSTR.)

The head has a dense tuft on the crown; the antennæ are long and slender; the palpi more or less drooping, divaricating, and slender, of moderate length, with the third joint not thinner than the preceding; the wings long and narrow, almost cylindric in repose, the fore ones being elliptic-lanceolate, with the

costa arched, the apex rounded, and the disk anteriorly dark and posteriorly of light colours; the fringe of the hind wings is very long, extending all round the wing.

SPECIES 1.—EDERESA SEMIFUSCA[c].—(Haworth, etc.; Wood, fig. 1295; and our Plate CXI., Fig. 9.)—Expands about ½ an inch; fore wings narrow, brown, with a fringe of purple, with the inner margin broadly white, which is divided into two parts by a straight, abbreviated, brown fascia; the costa minutely dotted with white, and a larger triangular one near the tip; hind wings shining, leaden coloured, with very deep fringe. Common in hedges, etc., about the beginning of June.

[c] SYNONYME.—*Phalæna Tinea pruniella*, Turton; Donov., 2, pl. 58, pl. 59, fig. 2.

SPECIES 2.—EDERESA MENDICELLA.—(Hübner, etc.; Wood, fig. 1296; and our Plate CXI., Fig. 10.)—Expands nearly ½ an inch; fore wings ashy-brown, with a purplish tinge; the costa strongly dotted with white; the inner margin with a white streak, divided in the middle by an abbreviated, square, brown fascia, placed transversely; hind wings brown. Common in gardens and hedges.

SECIES 3.—EDERESA ALBISTRIA.—(Haworth, etc.; Wood, fig. 1297; and our Plate CXI., Fig. 11.)—Expands from 4½ to 6 lines; fore wings fulvous, or fulvous-purplish, with a white streak on the inner margin, not extending to the anal angle, and interrupted in the middle with brown; hind wings brown. Taken in woods, in June.

SPECIES 4.—EDERESA PRUNIELLA[d].—(Linnæus, etc.; Wood, fig. 1298; and our Plate CXI., Fig. 12.)—Expands 5 or 6 lines; fore wings greyish-yellow, with the costa dotted with white, and a white streak preceded by a dark dash along the inner margin, divided in the middle by an oblique purplish-brown fascia; hind wings brown. Common in woods, in June and July.

[d] SYNONYME.—*Alucita ephippella*, Fabricius.

SPECIES 5.—EDERESA TETRAPODELLA.—(Linnæus, etc.; Wood, fig. 1299; and our Plate CXI., Fig. 13.)—Expands nearly ½ an inch; fore wings grey, a longitudinal snow-white streak on the inner margin, interrupted towards the anal angle by a brown lunule; hind wings leaden-brown and glossy. Gardens, in June.

SPECIES 6.—EDERESA SEMIPURPURELLA.—(Stephens; Wood, fig. 1300; and our Plate CXI., Fig. 14, but not of Curtis.)—Expands 6½ lines; fore wings elongate, purplish-brown, immaculate; the inner margin with a broad snow-white streak, slightly interrupted in the middle, and narrowed towards the anal angle; hind wings brown.

SPECIES 7.—EDERESA SEMITESTACELLA[e].—(Curtis, Brit. Ent., pl. 719; Wood, fig. 1301?)—Expands 5 lines; fore wings fulvous, slightly mottled, with a slight violet tinge; three whitish dots at the apex of the costa, and an attenuated dash of the same on the inner margin, not extending beyond the middle; hind wings pale leaden coloured; fringe of fore wings with two curved brown lines at the base. New Forest, etc., in June.

[e] SYNONYME.—*Ed. semipurpurella*, Curt. var., but not of Stephens.

SPECIES 8.—EDERESA CURTELLA.—(Linnæus, etc.; Wood, fig. 1302; and our Plate CXI., Fig. 15.)—Expands 5 lines; fore wings silky-white, slightly powdered with brown striolæ, with the apical margin brownish, and a brownish arch in the middle varying in strength; hind wings lanceolate, leaden-brown, and very glossy, with very deep fringe. Gardens and marshy places, near osiers and willows, in June and July.

SPECIES 9.—EDERESA CLEMATELLA[f].—(Fabricius, etc.; Wood, fig. 1303; and our Plate CXI., Fig. 16.)—Expands 5 or 6 lines; fore wings snow-white, glossy, with a short black streak at the base; an oblique, very angulated, blackish fascia, and one or two black dots at the apex of the wings; hind wings ashy. Variable in the extent of the black markings as well as the ground-colour of the fore wings. The caterpillar feeds on the clematis, and the moth appears in July. Darenth, Ripley, etc.

[f] SYNONYMES.—*Tinea arcella*, Fabricius (?).
Tinea repandella, Hübner (?).

SPECIES 10.—EDERESA OSSEA.—(Haworth; Wood, fig. 1304, 1306?)—Expands about 5 lines; fore wings cream coloured, shining with a silvery gloss, with an abbreviated streak at the base, and an oblique, very slender, and very short one on the inner margin, of a luteous colour; fringe dirty-yellowish; hind wings leaden-brown and glossy; fringe of the same colour; the streaks are sometimes almost obsolete. Taken in woods, in June and July.

SPECIES 11.—EDERESA OCELLEA.—(Stephens; Wood, fig. 1305; and our Plate CXI., Fig. 18.)—Expands 4½ lines; fore wings shining, bone-white or cream coloured, slightly silvery, sprinkled with ochreous-white; the apex with the lutescent dot, surrounded by a white circle and a lutescent outer one; hind wings fuscous. Darenth Wood, June; very rare.

ARGYROSETIA, STEPHENS.

These insects are closely allied to the preceding, having slender drooping palpi, not bent backwards, with the terminal joint not longer than the others; long, narrow-lanceolate, convoluted wings, and slender antennæ; but the fore wings are adorned with metallic fasciæ, resembling letters, and the fringe of the fore wings is very long next the anal angle.

SPECIES 1.—ARGYROSETIA GŒDARTELLA[g].—(Linnæus, etc.; Wood, fig. 1307; and our Plate CXI., Fig. 19.) Expands 5 or 6 lines; fore wings silvery-white, with broad golden-red fasciæ, resembling the letters IVT, with a silvery dot at the tip; hind wings leaden; the golden marks of the fore wings are sometimes diffused almost over the entire surface. Taken in birch-woods about the end of June.

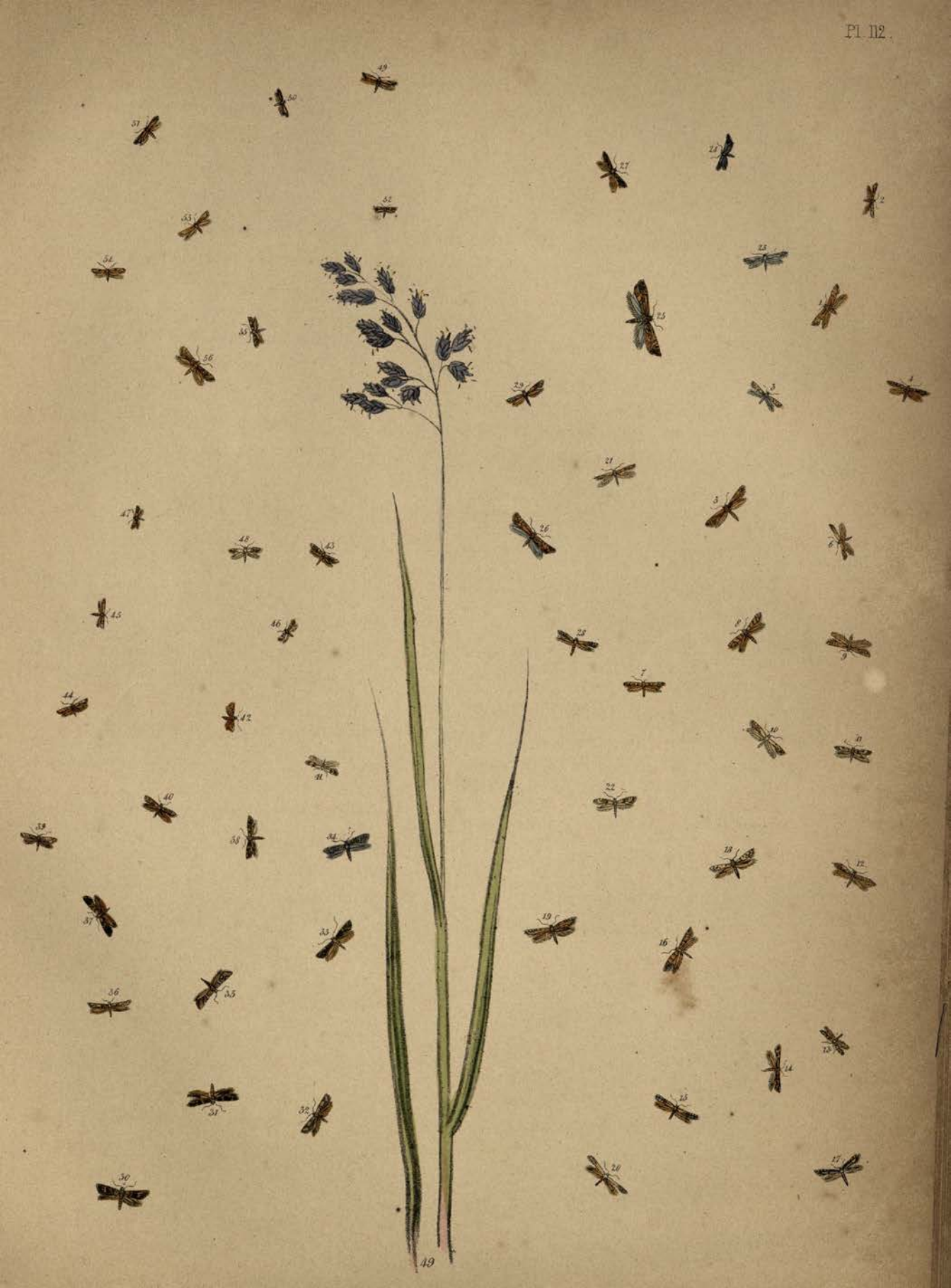
[g] SYNONYME.—*Phalæna semiargentella*, Donovan, 2, pl. 65, figs. 2, 3.

SPECIES 2.—ARGYROSETIA SEMIFASCIELLA.—(Haworth; Wood, fig. 1308; and our Plate CXI., Fig. 20.)—Expands 6 lines; fore wings silvery, with three pale golden abbreviated fasciæ on the inner margin; the first very oblique from the middle of the base nearly to the middle of the inner margin, the second in the middle obliquely directed towards the apex, and the third a mere dot at the anal angle. Variable in the extent of the fasciæ. In woods, about the end of June; beaten from the sallow by Mr. Bentley.

SPECIES 3.—ARGYROSETIA BROCKELLA[h].—(Hubner, etc.; Wood, fig. 1309; and our Plate CXI., Fig. 21.) Expands 5 or 6 lines; fore wings silvery, with golden-burnished red fasciæ, forming the letters IW, with a silver dot at the apex; hind wings leaden, with golden-brown fringe; head and thorax white. In woods, at the end of June.

[h] SYNONYME.—*Tinea IW-ella*, Haworth.

SPECIES 4.—ARGYROSETIA LITERELLA.—(Haworth, etc.; Wood, fig. 1310; and our Plate CXI., Fig. 22.)—Expands about 5½ lines; fore wings silvery, with a golden gloss, and with golden fasciæ not reaching the costa, formed like the letters l, a short-tailed y, and the Greek ω; hind wings leaden, with golden-brown fringe; head and thorax fulvescent. Rare; taken in woods, in June.



SPECIES 5.—ARGYROSETIA AURIVITELLA.—(Haworth; Wood, fig. 1311; and our Plate CXI., Fig. 23.)—Expands 5—5½ lines; fore wings silvery, with a broad, sinuated, golden ribbon running from the base to the tip of the wing (nearly occupying the whole of it), and having a silvery dot at the apex; hind wings leaden. Very rare; taken in woods, in June.

SPECIES 6.—ARGYROSETIA AURIFASCIELLA.—(Stephens; Wood, fig. 1312; and our Plate CXI., Fig. 24.)—Expands 5½ lines; fore wings silvery, "with an interrupted, broad, irregular, shining, coppery-gold streak, composed, as it were, of an oblique band near the base, detached from the other portion by an extremely brilliant silvery line; then a second very broad transverse streak, extending from the costa to the inner margin, and connected with a third, which occupies the margin portion of the apex." Darenth Wood, in June. In Mr. Stephens's collection.

SPECIES 7.—ARGYROSETIA I-V-ELLA.—(Haworth; Wood, fig. 1313; and our Plate CXI., Fig. 25.)—Expands 5½ lines; fore wings silvery, the costa slightly yellow, a bar nearly across the middle of the wing, which is connected on its anterior extremity with a broad V-like mark, extending to the apex. Woods, in June, but very rare.

DESCRIPTION OF PLATE CXII.

INSECTS.—Fig. 1. Argyromiges Blancardella (the Blancardian).
" Fig. 2. Argyromiges Schreberella (the Schreberian).
" Fig. 3. Argyromiges Cydoniella (the bright-speckled gold).
" Fig. 4. Argyromiges Klemannella (the Klemannian).
" Fig. 5. Argyromiges Mespilella (the silver spotted gold).
" Fig. 6. Argyromiges Raiella (the Rayian).
" Fig. 7. Argyromiges tristrigella (the treble spotted gold).
" Fig. 8. Argyromiges trifasciella (the tawny treble bar).
" Fig. 9. Argyromiges Harrisella (the Harrisian).
" Fig. 10. Argyromiges Cramerella (the Cramerian).
" Fig. 11. Argyromiges hortella (the porcelain).
" Fig. 12. Argyromiges sylvella (the dark porcelain).
" Fig. 13. Argyromiges cuculipenella (the cuckoo's feather).
" Fig. 14. Argyromiges Corylifoliella (the hazel red).
" Fig. 15. Argyromiges Ulmifoliella (the elm red).
" Fig. 16. Argyromiges Alnifoliella (the alder red).
" Fig. 17. Argyromiges obscurella (the dull red).
" Fig. 18. Argyromiges rufipunctella (the red and white barred).
" Fig. 19. Argyromiges autumnella (the autumnal).
" Fig. 20. Argyromiges nivella (the snowy).
" Fig. 21. Argyromiges semiaurella (the pale gold dot).
" Fig. 22. Argyromiges unipunctella (the simple dot).
" Fig. 23. Argyromiges Spartifoliella (the golden dot).
" Fig. 24. Argyromiges Clerckella (the Clerckian).
" Fig. 25. Heribeia Haworthana (the Haworthian).
" Fig. 26. Heribeia humerella (the shoulder stripe).
" Fig. 27. Heribeia Forsterella (the Forsterian).
" Fig. 28. Heribeia simpliciella (the simple shoulder stripe).
" Fig. 29. Heribeia cognatella (the allied shoulder stripe).
" Fig. 30. Microsetia sub-bistrigella (the double silver bar).

INSECTS.—Fig. 31. Microsetia obsoletella (the obscure dot).
" Fig. 32. Microsetia exiguella (the small dot).
" Fig. 33. Microsetia cinereo-punctella (the grey dotted brown).
" Fig. 34. Microsetia stipella (the triple gold spotted).
" Fig. 35. Microsetia guttella (the white spotted sable).
" Fig. 36. Microsetia quadrella (the silver spotted sable).
" Fig. 37. Microsetia sequella (the silver blotched).
" Fig. 38. Microsetia pulchella (the small argent and sable).
" Fig. 39. Microsetia bella (the beautiful argent and sable).
" Fig. 40. Microsetia nigrella (the small double silver bar).
" Fig. 41. Microsetia trimaculella (the cream spotted sable).
" Fig. 42. Microsetia sub-bimaculella (the brown spotted sable).
" Fig. 43. Microsetia nigrociliella (the black edged sable).
" Fig. 44. Microsetia unifasciella (the silver barred brown).
" Fig. 45. Microsetia mediofasciella (the central silver bar).
" Fig. 46. Microsetia posticella (the pigmy silver bar).
" Fig. 47. Microsetia aurella (the diamond barred pigmy).
" Fig. 48. Microsetia floslactella (the creamy pigmy).
" Fig. 49. Microsetia atricapitella (the black-headed pigmy).
" Fig. 50. Microsetia ruficapitella (the red-headed pigmy).
" Fig. 51. Microsetia violacella (the violet pigmy).
" Fig. 52. Microsetia pygmæella (the least pigmy).
" Fig. 53. Microsetia sericiella (the satin pigmy).
" Fig. 54. Microsetia aurofasciella (the gold banded).
" Fig. 55. Microsetia Gleichella (the Gleichian).
" Fig. 56. Microsetia Pfeifferella (the four-spotted gold).

The insects in this plate are from the cabinet of Mr. Bentley, with the exception of Nos. 11, 15, 17, 18, 19, 22, 28, 29, 30, 34, 39, 43, 44, 49, and 54, from Fisher, Hübner, Wood, and other sources.

ARGYROMIGES, CURTIS.

These insects have drooping palpi, with the last joint longest, thickest, and acute at the tip; the antennæ are as long as the wings, and slender, and the fore wings are linear, sublanceolate, often marked with golden or

silvery spots, strongly fringed on the inner margin and apex; the hind wings are also very narrow, but with very long fringe. The caterpillars have six pectoral, eight abdominal, and two anal feet.

SPECIES 1.—ARGYROMIGES BLANCARDELLA.—(Fabricius, etc.; Wood, fig. 1314; and our Plate CXII., Fig. 1.)—Expands 3½—4 lines; fore wings golden and shining, with a silver longitudinal line at the base united with the silvery margin of the thorax, four dots on the costa, and three on the inner margin, all beyond the middle, and silvery, the tip with a tawny streak; hind wings silvery. Taken in woods, about the end of May.

SPECIES 2.—ARGYROMIGES SCHREBRELLA.—(Fabricius, etc.; Wood, fig. 1315; and our Plate CXII., Fig. 2.)—Expands 3 lines; fore wings golden; the base, two fasciæ in the middle, and two dots on the opposite margins near the apex, of glossy silver; hind wings silvery-ashy. Rare; hedges and woods, in May.

SPECIES 3.—ARGYROMIGES CYDONIELLA.—(Fabricius, etc.; Wood, fig. 1316; and our Plate CXII., Fig. 3.)—Expands 3 lines; fore wings golden, with a line at the base, and eight dots placed in pairs on the opposite margins, all of pure white; hind wings pale ashy. Our Pyrus cydonia; in gardens, etc., in May.

SPECIES 4.—ARGYROMIGES KLEMANNELLA.—(Fabricius, etc.; Wood, fig. 1317; and our Plate CXII., Fig. 4.)—Expands 3½ lines; fore wings shining golden, with two entire silver streaks towards the base, and two beyond the middle, interrupted in the middle, and nearly confluent; the tip of the wing with a black dot. In woods and hedges, in May.

SPECIES 5.—ARGYROMIGES MESPILELLA.—(Hübner, etc.; Wood, fig. 1318; and our Plate CXII., Fig. 5.)—Expands 4—4½ lines; fore wings fulvous-golden, with a slender silver line at the middle of the base, and seven marginal, suboblique, comma-like marks placed in pairs on the opposite margins (the seventh excepted), and all silvery; the inner margin silvery, as far as the middle; the opposite silver spots are sometimes confluent. In hedges, about the end of May.

SPECIES 6.—ARGYOMIGES RAJELLA.—(Linnæus, etc.; Wood, fig. 1319; and our Plate CXII., Fig. 6.)—Expands 3—3½ lines; fore wings golden-brown, with three pairs of silvery spots on the opposite margins, the middle ones often confluent, forming a transverse fascia; the apex of the wing with a dusky cloud. Common in gardens, in May.

SPECIES 7.—ARGYROMIGES TRISTRIGELLA.—(Haworth, etc.; Wood, fig. 1320; and our Plate CXII., Fig. 7.)—Expands 3½ lines; head, antennæ, and palpi golden-silver; fore wings tawny-gold, with a straight fascia before, a second in the middle, and a third beyond the middle, all equidistant and golden-silvery; hind wings leaden-brown. In woods, at the end of May.

SPECIES 8.—ARGYROMIGES TRIFASCIELLA.—(Haworth, etc.; Wood, fig. 1321; and our Plate CXII., Fig. 8.)—Expands 3¾ lines; head tawny, with a snow-white forehead; fore wings dark fulvous, with three brown, equidistant, nearly straight fasciæ, brown outwardly, whitish-gold, the third furcate near the anal angle; the tip of the wing with a brown oblong spot; hind wings leaden-brown. Rare; in woods, in May.

SPECIES 9.—ARGYROMIGES HARRISELLA.—(Linnæus, etc.; Wood, fig. 1322; and our Plate CXII., Fig. 9.)—Expands 3½—5 lines; fore wings golden-silvery, variegated, with the tip obtuse, and having a subocellated brownish spot with a central black dot; hind wings ashy-white. Common in May and June, in woods.

SPECIES 10.—ARGYROMIGES CRAMERELLA[1].—(Fabricius, etc.; Wood, fig. 1323; and our Plate CXII., Fig. 10.)—Expands 3½—4 lines; fore wings silvery-white, with three pairs of oblique, brown, marginal lineolæ beyond the middle of the wing, and a black subocellated dot at the apex. Common in gardens and hedges, about the end of May. The caterpillar feeds within an oak-leaf, devouring the parenchyma; the chrysalis working its way through the lower surface of the leaf when the perfect insect is ready to burst forth.

[1] SYNONYME.—*Tinea Prunifoliella*, Hübner.
Phalæna Tinea Bonnetella, Linnæus (?).

SPECIES 11.—ARGYROMIGES HORTELLA[1].—(Fabricius, etc.; Wood, fig. 1324; and our Plate CXII., Fig. 11.) —Expands 4 lines; fore wings of shining silver, with three oblique yellow fasciæ, the third interrupted; the apex with a short black line; hind wings glossy white. Taken in woods and gardens, about the end of May.

[1] SYNONYME.—*Phal. Tinea Cramerella*, Donovan, x pl. 392, fig 1 (?) but not of other authors.

SPECIES 12.—ARGYROMIGES SYLVELLA.—(Haworth, etc.; Wood, fig. 1325; and our Plate CXII., Fig. 12.) —Expands 3¾ lines; fore wings white, with two ashy fasciæ, one near the base, and the second rectangular in the middle, both edged with brown; towards the extremity of the wing is a grey cruciform mark, indistinctly edged with brown, and at the apex is a minute ashy ocellus, with a brown iris and an oblong longitudinal black pupil; hind wings ashy-whitish. Taken at the end of May, in woods.

SPECIES 13.—ARGYROMIGES CUCULIPENNELLA.—(Haworth, etc.; Wood, fig. 1326; and our Plate CXII., Fig. 13.)—Expands 3½—4 lines; head snow-white; fore wings hoary, with oblique brown streaks placed at equal distances apart, namely, three or four on the costal, and two or three on the inner margin, the inner ones occasionally confluent; at the apex is also a short black streak. Woods, in May.

SPECIES 14.—ARGYROMIGES CORYLIFOLIELLA.—(Hübner, etc.; Wood, fig. 1237; and our Plate CXII., Fig. 14.)—Expands 4 lines; fore wings red, with a very slender yellowish streak from the base to beyond the middle, followed by two other oblique ones on the opposite margins in the middle, confluent on the disk, forming a Greek γ, and occasionally, beyond this, one or two very slender pale lineolæ; hind wings brown. Found in woods, about the end of May.

SPECIES 15.—ARGYROMIGES ULMIFOLIELLA.—(Hübner, etc.; Wood, fig. 1328; and our Plate CXII., Fig. 15.)—Expands 3½—4 lines; fore wings red, with darker clouds, and a very slight whitish streak at the base, an angulated but almost obsolete pale streak in the middle, and another at the apex; hind wings reddish, ash. Taken near London, in June.

SPECIES 16.—ARGYROMIGES ALNIFOLIELLA.—(Hübner, etc.; Wood, fig. 1329; and our Plate CXII., Fig. 16.) —Expands 3½ lines; fore wings dull red, with two slender whitish streaks on the disk, and another at the apex like the figure 8 with the top cut off; hind wings reddish-ash. Taken in woods, about the beginning of June.

SPECIES 17.—ARGYROMIGES OBSCURELLA.—(Stephens; Wood, fig. 1330; and our Plate CXII., Fig. 17.)—Expands 3½ lines; fore wings dull testaceous, with some very obsolete whitish streaks beyond the middle, and a few palish dots at the tip of the costa; the inner margin whitish at the base. Coombe Wood, beginning of June.

SPECIES 18.—ARGYROMIGES RUFIPUNCTELLA.—(Haworth, etc.; Wood, fig. 1331; and our Plate CXII., Fig. 18.)—Expands 3¾ lines; fore wings ashy, with two or three equidistant fasciæ; the first, towards the base

almost obsolete; the second in the middle, formed of a white spot, a smaller black one, and a red one, more or less connected together; the third fascia is subapical, and resembles the second; hind wings leaden-brown. Hedges in Kent, about the end of May, but rare.

SPECIES 19.—ARGYROMIGES AUTUMNELLA.—(Curtis, B. E., pl. 284; Wood, fig. 1332; and our Plate CXII., Fig. 19.)—Expands 4 lines; fore wings white, with a brown longitudinal dash, dilated at each end at the extremity of the wing; the costa with four small, blackish, triangular marks; a black apical dot, below which is a small spot and a black ray; hind wings shining brown. The caterpillar is pale green, and is found on the elm, in the autumn; when full grown it forms an oval cocoon, which it attaches by a few threads from the corners, like a hammock, to the under side of the leaf. The moth is found at the same time as the caterpillar.

SPECIES 20.—ARGYROMIGES NIVELLA[k].—(Stephens; Wood, fig. 1333; and our Plate CXII., Fig. 20.)—Expands 4 lines; fore wings "snow-white, with a large fuscescent cloud at the apex, adjoining to which are three or four dark, somewhat radiating streaks, and at the extreme apex a minute black dot;" hind wings ashy-brown; head snowy. Found in woods and forests, at the beginning of June.

[k] SYNONYME.—*Tinea cerasifoliella*, Hübner.

SPECIES 21.—ARGYROMIGES SEMIAURELLA.—(Stephens; Wood, fig. 1334; and our Plate CXII., Fig. 21.)—Expands 3 lines; fore wings "of a somewhat shining golden hue; the apex darkish, with about three obscure deeper golden streaks forming a radiated figure, at the apex of which is a minute dusky dot;" hind wings with a shining golden tinge. Found in the New Forest and elsewhere, in June.

SPECIES 22.—ARGYROMIGES UNIPUNCTELLA.—(Stephens; Wood, fig. 1335; and our Plate CXII., Fig. 22.)—Expands 2½ to 3 lines; fore wings shining silvery snow-white, with a few radiating golden streaks at the extremity of the wing, and an apical black dot; hind wings and head snow-white. Taken in woods, about the beginning of June.

SPECIES 23.—ARGYROMIGES SPARTIFOLIELLA[l].—(Hübner; Wood, fig. 1336; and our Plate CXII., Fig. 23.)—Expands 3½ to 4 lines; all the wings silvery, the fore ones with seven oblique, brown, costal streaks, connected together and radiating towards the extremity; the four anterior having an intervening gold dash, and a convex golden spot at the anal angle, which is black at each side in certain positions. Taken in places where broom abounds, about the beginning of June.

[l] SYNONYME.—*Tinea punctaurella*, Haworth.

SPECIES 24.—ARGYROMIGES CLERCKELLA.—(Linnæus, etc.; Wood, fig. 1337; and our Plate CXII., Fig. 24.)—Expands 2½ to 4 lines; fore wings shining silver, the apical part tawny-gold, with a white costal margin, divided by four or six radiating brown stripes, and with a round black spot at the anal angle; hind wings silvery. Rare; in woods, about the beginning of June. [This insect, hitherto described as T. Clerckella of Linnæus, is quite distinct therefrom. See my article on it in the "Gardener's Magazine of Botany." It is the T. Scitella of continental writers, and is very injurious in gardens, the caterpillar forming large blisters on the leaves of pear-trees.]

HERIBEIA, STEPHENS.

The palpi are short, ascending, and not divaricating; the terminal joint longer than the preceding; the antennæ rather short; the head clothed with smooth imbricated scales, and the fore wings slightly convoluted in repose; elongate-triangular, with a round spot at the apex; the disk generally of dark colours; the extremity of the costa marked with several short, slender, silvery lines.

SPECIES 1.—HERIBEIA HAWORTHANA.—(Stephens, Ill., pl. 39, fig. 2; Wood, fig. 1338; and our Plate CXII., Fig. 25.)—Expands from 5½ to 7 lines; fore wings golden-brown, with a recurved lunule of white arising from the middle of the inner margin, and extending towards the apex, followed by about five slender silvery-white streaks from the costa, the first extended towards the inner margin; the anal angle with silvery scales, and the apex with a black dot, surrounded by a white circle; hind wings brownish-grey. Taken near Birmingham, in June.

SPECIES 2.—HERIBEIA HUMERELLA.—(Hübner; Wood, fig. 1339; and our Plate CXII., Fig. 26.)—Expands 3½ to 4 lines; fore wings golden-brown, with a streak at the base of the costa, a curved white streak in the middle of the inner margin, and five marginal streaks, all of silvery-white; the extremity of the costa with a black dot, having a silvery pupil; hind wings dusky. Taken in woods, at the end of May.

SPECIES 3.—HERIBEIA FORSTERELLA.—(Fabricius; Wood, fig. 1340; and our Plate CXII., Fig. 27.)—Expands 3¼ to 3¾ lines; fore wings golden-brown, the base immaculate, in the middle of the inner margin is a silvery arch, and beyond this five marginal silvery strigæ; the tip with a black dot, having a silvery pupil. Taken in woods, at the end of May.

SPECIES 4.—HERIBEIA SIMPLICIELLA[m].—(Stephens; Wood, fig. 1341; and our Plate CXII., Fig. 28.)—Very similar to the last (and probably only a variety of it), but wanting the curved silvery bar at the middle of the inner margin. Taken at Coombe and elsewhere, at the end of May.

[m] SYNONYME.—*Tinea Fosterella*, variety (Haworth).

SPECIES 5.—HERIBEIA COGNATELLA.—(Stephens; Wood, fig. 1342; and our Plate CXII., Fig. 29.)—Expands 3 lines; fore wings golden-brown, towards the extremity of the costa are four oblique faint silvery streaks; hind wings pale ashy-brown. Taken at Darenth Wood, in June.

MICROSETIA, STEPHENS.

This genus, as the name implies, contains a group of exceedingly minute, indeed the most minute, lepidopterous insects; the palpi are rather long, slender, and somewhat divaricating and incurved; the terminal joint more slender, and shorter than the preceding; the antennæ short and simple; the head with a slight tuft; and the wings convoluted in repose; the fore ones elongate, somewhat linear, of dark or black colours, with a pale streak near the base, and another (interrupted) towards the apex of the wings; the fringe of all the wings is very deep.

SPECIES 1.—MICROSETIA SUB-BISTRIGELLA.—(Haworth, etc.; Wood, fig. 1343; and our Plate CXII., Fig. 30.)—Expands 5¼ lines; fore wings black or blackish, with a straight linear fascia before, and another beyond the middle almost interrupted, both snow-white, silvery or pale lutescent, the latter sometimes continuous and slightly curved; hind wings dusky-black. Taken in woods, at the beginning of June.

SPECIES 2.—MICROSETIA OBSOLETELLA.—(Stephens; Wood, fig. 1344; and our Plate CXII., Fig. 31.)—Expands 5½ lines; fore wings black, with a nearly obsolete slender fascia across the middle of the wing of ashy-white, and a faint yellowish spot near the apex of the costa; hind wings dusky-black. Taken in June, at Ripley.

SPECIES 3.—MICROSETIA EXIGUELLA.—Fabricius (?); Wood, fig. 1345; and our Plate CXII., Fig. 32.)—Expands 3½ to 4½ lines; fore wings black, with a transverse central fascia, and a spot near the apex of the costa, and another opposite, on the anal angle, all ashy; hind wings and head black. Taken in woods, about the beginning of June.

SPECIES 4.—MICROSETIA CINEREO-PUNCTELLA.—(Haworth, etc.; Wood, fig. 1346; and our Plate CXII., Fig. 33.)—Expands 3½ to 4 lines; fore wings black, the anterior with an obsolete ashy transverse streak from the costa nearly to the inner margin, and with an ashy dot at the anal angle, and another near the apex, both more or less obsolete; head snow-white. Woods, Kent, at the end of May.

SPECIES 5.—MICROSETIA STIPELLA.—Hübner, etc.; Wood, fig. 1347; and our Plate CXII., Fig. 34.)—Expands 3½ lines; fore wings brown, with three fine large gold spots arranged in a triangle, one on the middle of the inner, and the two others on the costal margin; head white. Taken in woods, in Kent, in May.

SPECIES 6.—MICROSETIA GUTTELLA.—Hübner, etc.; Wood, fig. 1348; and our Plate CXII., Fig. 35.—Expands 4 to 4½ lines; head yellow; fore wings shining, pitchy-black or black, with four snow-white marginal spots arranged in opposite pairs, the two anterior almost confluent, with a fascia preceding, and the two others more remote beyond the middle of the wing; hind wings black. Taken in woods, about the beginning of June.

SPECIES 7.—MICROSETIA QUADRELLA.—(Fabricius, etc.; Wood, fig. 1349; and our Plate CXII., Fig. 36.)—Expands 4 lines; fore wings black, with four silvery white spots placed obliquely in opposition to each other on the margins in pairs, the anterior pair sometimes united by a silvery line; hind wings brown; head white. Taken in gardens and woods, at the end of May.

SPECIES 8.—MICROSETIA SEQUELLA.—(Haworth, etc.; Wood, fig. 1350; and our Plate CXII., Fig. 37.)—Expands 3¼ to 3½ lines; fore wings black, with a broad, pure white fascia before the middle, a minute spot in the middle of the inner margin, and a large costal dot placed nearer the tip, also with silvery-white atoms towards the apical margin; hind wings brownish. Taken in hedges and woods, at the end of May.

SPECIES 9.—MICROSETIA PULCHELLA.—(Haworth, etc.; Wood, fig. 1351; and our Plate CXII., Fig. 38.)—Expands 3¼ lines; fore wings deep black, with a broad white stripe along the inner margin at the base, a splendid silver, straight, central fascia united to the stripe, and two silvery oblique spots, one on the costa and one on the inner margin, the former nearer to the apex; hind wings whitish; head and anal tuft white. Taken in the Kentish woods, in June, but rare.

SPECIEL 10.—MICROSETIA BELLA.—(Stephens, Illustr.; Wood, fig. 1352; and our Plate CXII., Fig. 39.)—Expands 3½ lines; fore wings deep velvet black, with a broad, incurved, snowy, silvery fascia before the middle, and a rather large triangular spot near the apex, of the same hue; hind wings brown; head and front of the thorax silvery-white. Taken in Scotland, in June.

SPECIES 11.—MICROSETIA NIGRELLA.—(Hübner, etc.; Wood, fig. 1353; and our Plate CXII., Fig. 40.)—Expands 3½ lines; fore wings black or deep black, with two silvery, somewhat oblique, divaricating fasciæ, one before and the other, occasionally interrupted, beyond the middle; hind wings leaden-brown, shining. Taken in woods, in June.

SPECIES 12.—MICROSETIA TRIMACULELLA.—(Haworth, etc.; Wood, fig. 1354; and our Plate CXII., Fig. 41.) —Expands 2¾ lines; fore wings black, with a very broad, lutescent, emarginate streak extending from the base nearly to the middle, and two nearly confluent, yellowish, marginal blotches on the opposite margins, near the extremity of the wings; hind wings blackish. Taken in gardens, and on the trunks of poplars, at the beginning of July, but rare.

SPECIES 13.—MICROSETIA SUB-BIMACULELLA.—(Haworth, etc.; Wood, fig. 1355; and our Plate CXII., Fig. 42.)—Expands 2½ lines; fore wings black, with the base whitish, and two oblique, opposed, nearly confluent silvery spots, one on the middle of the inner margin, and the other more anteriorly on the costa; hind wings leaden-black; head fulvous or white. Taken in hedges or gardens, at the beginning of July.

SPECIES 14.—MICROSETIA NIGROCILIELLA.—(Stephens; Wood, fig. 1356; and our Plate CXII., Fig. 43.)— Expands 2½ lines; fore wings black, with two slightly silvery marginal spots, one about the middle of the costa, and the other towards the anal angle; fringe dusky black; hind wings dusky. Taken near London, in July.

SPECIES 15.—MICROSETIA UNIFASCIELLA.—(Haworth, etc.; Wood, fig. 1357; and our Plate CXII., Fig. 44.)—Expands 3½ lines; fore wings pale silken brown, with a straight, almost central, silvery fascia; hind wings brown, with very long pale brown fringe. Taken in the Kentish woods, in June, but very rare.

SPECIES 16.—MICROSETIA MEDIOFASCIELLA.—(Haworth, etc.; Wood, fig. 1358; and our Plate CXII., Fig. 45.)—Expands 2½ lines, very similar to the last, with black fore wings and a silvery fascia nearer the centre, and slightly interrupted; hind wings broad, and leaden-black. Taken in June, near London, etc.

SPECIES 17.—MICROSETIA POSTICELLA[n].—(Haworth, etc.; Wood, fig. 1359; and our Plate CXII., Fig. 46.) Expands 2½ lines; fore wings silken, silvery-brown, with a golden-silvery fascia from the costa nearly to the anal angle, beyond which in certain lights the wings are purplish-brown; hind wings very pale brown. Taken near London, etc., in July.

[n] SYNONYME.—*Tinea Hübnerella*, Hübner.

SPECIES 18.—MICROSETIA AURELLA.—(Fabricius, etc.; Wood, fig. 1360; and our Plate CXII., Fig. 47.) —Expands 1½ to 2½ lines; fore wings golden-brown. and very brilliant, with a silvery or golden-silvery fascia beyond the middle, the space beyond being black, with a purple, coppery, or violet tinge. Common in hedges, in June.

SPECIES 19.—MICROSETIA FLOSLACTELLA.—(Haworth, etc.; Wood, fig. 1361; and our Plate CXII., Fig. 48.) —Expands 3 lines; fore wings pale flavescent, with a large, irregular, central, fascia-like mark, and another somewhat rounded near the tip, of violet-black, extending from the costa to the inner margin; fringe yellowish-white; hind wings leaden-brown, silky, with very long leaden fringe. The central fascia is sometimes obsolete. Taken in hedges, near woods, at the end of May.

SPECIES 20.—MICROSETIA ATRICAPITELLA.—(Haworth, etc.; Wood, fig. 1362; and our Plate CXII., Fig. 49.)—Expands 2¾ lines; fore wings golden, with the costa broadly purplish in certain lights, and the apex also broadly purple; head black, with a white streak at the base of the antennæ. Taken in hedges, at the beginning of June.

SPECIES 21.—MICROSETIA RUFICAPITELLA.—(Haworth, etc.; Wood, fig. 1363; and our Plate CXII., Fig. 50.)—Expands 2¾ lines. Resembles the preceding in the colours of its wings, but has not any purple gloss on the costa, and the head is red, or brick-red. Taken near London, in June

SPECIES 22.—MICROSETIA VIOLACELLA.—(Haworth. etc.; Wood, fig. 1364; and our Plate CXII., Fig. 51.) —Expands 3 lines; fore wings violaceous, black; head brick-red, with a white streak at the base of the antennæ. Taken in gardens, in June.

SPECIES 23.—MICROSETIA PYGMÆELLA.—(Haworth, etc.; Wood, fig. 1365; and our Plate CXII., Fig. 52.) —Expands 1¾ to 2½ lines; fore wings pale golden, with the apical margin obsoletely purple; head red or brick-red, or buff. Taken in hedges near London, etc., in June.

SPECIES 24.—MICROSETIA SERICIELLA.—(Haworth, etc.; Wood, fig. 1366; and our Plate CXII., Fig. 53.) —Expands 3¼ to 3½ lines; fore wings silvery-brown and very glossy and silken, with two small, nearly triangular, pale whitish dots, visible in certain lights, one before and another in the middle of the inner margin. Common in hedges and woods, at the end of May.

SPECIES 25.—MICROSETIA AUROFASCIELLA.— (Stephens; Wood, fig. 1367; and our Plate CXII., Fig. 54.) —Extends 4½ lines; fore wings black-brown, with a golden fascia before and another behind the middle; hind wings brown; head golden-brass. Taken at Darenth Wood, in June, by Mr. Stephens.

SPECIES 26.—MICROSETIA GLIECHELLA.—(Fabricius, etc.; Wood, fig. 1368; and our Plate CXII., Fig. 55.) —Expands 3¾ lines; fore wings black, shining, with a bright silvery fascia in the middle, and two subapical silvery spots on the opposite margins; hind wings ashy. Taken in the Kentish woods, in June, but very rare.

SPECIES 27.—MICROSETIA PFEIFFERELLA°.—(Hübner, etc.; Wood, fig. 1369; and our Plate CXII., Fig. 56.)—Expands 4¼ lines; fore wings coppery-golden, with two large, obliquely-opposed, very splendid golden spots (often confluent into a somewhat arched anterior fascia), and two similar ones, but more distinct, larger, and triangular, also obliquely opposed to each other, beyond the middle, namely, one on the costa and the other on the inner margin; hind wings brownish. Taken in the Kentish woods, at the end of May, but very rare.

°SYNONYME.—*Tinea 4-guttella*, Haworth, etc.

DESCRIPTION OF PLATE CXIII.

INSECTS.—Fig. 1. Glyphipteryx Linnæella (the Linnæan).
„ Fig. 2. Glyphipteryx Roeselia (the Roeselian).
„ Fig. 3. Glyphipteryx Zinckella (the Zinckian).
„ Fig. 4. Glyphipteryx Schæfferella (the Schæfferian).
„ Fig. 5. Glyphipteryx bimaculella (the orange blotched black).
„ Fig. 6. Glyphipteryx eximia (the nonpareil).
„ Fig. 7. Glyphipteryx metallella (the metallic).
„ Fig. 8. Glyphipteryx subcuprella (the coppery).
„ Fig. 9. Glyphipteryx auroguttella (the gold dotted).
„ Fig. 10. Glyphipteryx variella (the variable).
„ Fig. 11. Glyphipteryx terminella (*Dale*).
„ Fig. 12. Pancalia Leuwenhoekella (the Leuwenhoekian).
„ Fig. 13. Pancalia Latreillella (the Latreillian).
„ Fig. 14. Pancalia Woodiella (the Woodian).
„ Fig. 15. Pancalia fusco-ænea (the brown brassy).
„ Fig. 16. Pancalia fusco-cuprea (the brown copper).
„ Fig. 17. Pancalia Merianella (the Merianian).
„ Fig. 18. Callisto guttea (the white spotted brown).
„ Fig. 19. Callisto Fyeslella (the Fuesslian).
„ Fig. 20. Callisto fusco-cuprella (the brown copper).
„ Fig. 21. Callisto fusco-viridella (the brown green).
„ Fig. 22. Harfagus cinctella (the silver barred sable).
„ Fig. 23. Harfagus albistrigella (the white striped sable).

INSECTS.—Fig. 24. Astyages grandipennis (the great raven feather).
„ Fig. 25. Astyages cylindrella (the buff-blotched slender).
„ Fig. 26. Astyages coracipennella (the small raven feather).
„ Fig. 27. Astyages serratella (the notched horn).
„ Fig. 28. Astyages obscurella (the brown feather).
„ Fig. 29. Astyages Gryphipennella (the vulture feather).
„ Fig. 30. Astyages lutarea (the shining clay).
„ Fig. 31. Astyages ochroleucella (the pale shining clay).
„ Fig. 32. Astyages nigricella (the black fringed clay).
„ Fig. 33. Astyages flavicaput (the yellow-headed black).
„ Fig. 34. Chrysocorys angustipennella (the narrow winged).
„ Fig. 35. Metallosetia spissicornis (the thick-horned green).
„ Fig. 36. Metallosetia Trifolii (the trefoil).
„ Fig. 37. Metallosetia brevicornis (the short-horned).
„ Fig. 38. Porrectaria Anatipennella (the goose feather).
„ Fig. 39. Porrectaria Otidipennella (the bustard feather).
„ Fig. 40. Porrectaria Anseripennella (the duck feather).
„ Fig. 41. Porrectaria Struthionipennella (the ostrich feather).
„ Fig. 42. Porrectaria ornatipennella (the silver-streaked hook tip).
„ Fig. 43. Porrectaria ochrea (the silver-streaked).

The insects figured in this plate, with the exception of 3, 5, 13, 14, 15, 27, 30, 32, 35, 39, 40, 41, from Wood's Index, and other sources, are from the cabinet of Mr. Bentley.

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GLYPHIPTERYX, Hübner, Curtis, Stephens (Ill.)* ŒCOPHORA, Stephens (Catal.)

These splendid insects have the palpi drooping and diverging outwards, longer than the head, and very slender; the antennæ slender, and as long as the wings; the head clothed with imbricated scales, and the fore wings somewhat deflexed when at rest, linear-lanceolate, generally marked with embossed metallic patches on a fulvous or yellow ground, and having the apical margin ill defined, in consequence of the long scales arising from the extremity of the disk, which become confused with the fringe. The larvæ are subcutaneous.

Species 1.—Glyphipteryx Linnæella.—(Clerck; Linnæus, etc.; Curtis, pl. 152; Wood, fig. 1370; and our Plate CXIII., Fig. 1.)—Expands 4½—6 lines; fore wings bright fulvous, with a black patch at the base, three silvery spots on the disk in a triangle, a streak on the costa, and a minute metallic dot at the base, and deep black fringe; tip of antennæ white. Taken on the trunks of willows, lime-trees, etc., round London, about the end of July.

Species 2.—Glyphipteryx Roesella.—(Linnæus; etc.; Wood, fig. 1371; and our Plate CXIII., Fig. 2.)—Expands 5 lines; fore wings fulvous, with an oblong black basal patch, followed by a somewhat oblique transverse black fascia; the costal, apical, and inner margins also black, which colour in certain lights is strongly glossed with silver, and on the disk of the wings are nine raised silvery dots. Very rare in woods, in July. The caterpillar is fourteen-footed, yellow, with a testaceous head, and resides within the leaves of the apple.

Species 3.—Glyphipteryx Zinckella.—(Hübner; Stephens; Wood, fig, 1372; and our Plate CXIII., Fig. 3.)—Expands 4½ to 5 lines; fore wings fulvous, with two transverse, nearly straight, silvery-white, slender fasciæ, and a longitudinal line of the same at the apex, all with narrow metallic black edges; the disk of each wing with three silvery dots, and the base, costa, and apical margin black. Taken in Devonshire, in June.

Species 4.—Glyphipteryx Schæfferella.—(Linnæus, etc.; Donovan, v., Plate 175; Wood, fig. 1373; and our Plate CXIII., Fig. 4.)—Expands 3½ to 4½ lines; fore wings rich fulvous, with the base, costal streak, apical margin, and transverse fascia before the middle, from which branch two longitudinal streaks, all black, changing according to the light to burnished silver; the disk also with three silver dots; hind wings brown. Taken on *Tanacetum vulgare* about the beginning of June.

Species 5.—Glyphipteryx bimaculella.—(Haworth, etc.; Wood, fig. 1374; and our Plate CXIII., Fig. 5.)—Expands 5 lines; fore wings narrow, black, with two large suboval orange patches on the disk, placed longitudinally; the first towards the base, extending nearly to the inner margin, the second near the apex, and further apart from the margin; hind wings black. Devonshire; rare.

Species 6.—Glyphipteryx eximia.—(Haworth, etc.; Wood, fig. 1375; and our Plate CXIII., Fig. 6.)—Expands 5 lines; fore wings splendidly varied with orange, gold, copper, black, and violet; at the base is a very broad changeable fascia, edged with black, followed by a triangular orange fascia, with a slender black margin and a brilliantly changeable band; the apical portion of the wing black, with a slender marginal changeable streak. Very rare; near London and Ripley, in July.

Species 7.—Glyphipteryx metallella.—(Wien. Verz. (?); Stephens; Wood, fig. 1376; and our Plate CXIII., Fig. 7.)—Expands 5 or 6 lines; entirely coppery-brown; fringe brown. Taken near Ripley, in July, by Mr. Stephens.

SPECIES 8.—GLYPHIPTERYX SUBCUPRELLA.—(Stephens; Wood, fig. 1377; and our Plate CXIII., Fig. 8.)—Expands 5½ lines; fore wings pale coppery-brown, glossy, immaculate; hind wings brownish-ashy, with paler fringe; body, etc., deep coppery-brown. Near London.

SPECIES 9.—GLYPHIPTERYX AUROGUTTELLA[p].—(Stephens; Wood, fig. 1378; and our Plate CXIII., Fig. 9.)—Expands 3½ to 4 lines; fore wings golden-brown, with four minute yellow dots; one near the base, and another near the middle of the inner margin, a third near the middle, and the fourth near the extremity of the costa; hind wings brownish. Taken in Darenth Wood, Kent, in June, by Mr. Stephens.

[p] SYNONYME.—*Tinea miscella*, Haworth (?).

SPECIES 10.—GLYPHIPTERYX (?) TARIELLA.—(Stephens; Wood, fig. 1379; and our Plate CXIII., Fig. 10.)—Expands 4½ lines; body and fore wings sooty-black, varied with irregular ashy or yellowish spots placed longitudinally on the disk; hind wings and fringe dark brown. Near Lyndhurst, in June.

SPECIES 11.—GLYPHIPTERYX TERMINELLA.—(Dale MS., and our Plate CXIII., Fig. 11.)—Expands 4 lines; fore wings rich dark chestnut, with a golden gloss, a silvery, strongly-angulated mark running from the base of the inner margin of the wing to about one-third of the length of the costal margin, two silvery dots placed obliquely in the middle of the wing, and a rather broad, very oblique, silvery dash (dilated on the costa) extending to the tip of the wings; hind wings brown; antennæ pale at the tips. Taken by Mr. Dale, in Dorsetshire, and described from Mr. Bentley's cabinet.

PANCALIA, STEPHENS.

These insects have the fore wings linear-lanceolate and adorned with embossed metallic spots on a fulvous disk, as in the last genus, with very long fringe; but the palpi are very slender, bent upwards, and considerably divaricating, with the second and third joints of equal length, but the third much slenderer, and acute at the tip; the head is clothed with broad depressed scales. The larvæ are subcutaneous.

SPECIES 1.—PANCALIA LEUWENHOECKELLA.—(Linnæus, etc.; Wood, fig. 1380; and our Plate CXIII., Fig. 12.)—Expands 4½ to 5 lines; fore wings obscure, testaceous, with a fascia towards the base, another in the middle, a transverse spot near the anal angle, and an oblique line near the apex, all black, changeable to silver; hind wings brown; tips of antennæ white. Taken near Bristol; in Cumberland; Darenth Wood; New Forest, etc., at the beginning of June.

SPECIES 2.—PANCALIA LATREILLELLA.—(Curtis; Wood, fig. 1381; and our Plate CXIII., Fig. 13.)—Expands 5 to 5½ lines; brown; fore wings ochreous-orange, with seven embossed silver spots on each antennæ entirely fuscous. Taken in Cumberland, and near London, and in Norbury Park, but very rare, at the end of June.

SPECIES 3.—PANCALIA WOODIELLA.—(Curtis, Brit. Ent., pl. 304; Wood, fig. 1382; and our Plate CXIII., Fig. 14.)—Expands 8 lines (?); fore wings bright orange; a short basal streak, narrowed in the middle, and an acuminated dash on the costa beyond the middle, both of silvery-black; the base of the inner margin, a black squamose patch in the middle of it, and a rather broad, sinuated, apical margin, all of purple-black; hind wings dark orange, freckled with black. Taken on Kersall Moor, Manchester, in June, by Mr. R. Wood.

SPECIES 4.—PANCALIA FUSCO-ÆNEA.—(Haworth, etc.; Wood, fig. 1383; and our Plate CXIII., Fig. 15.)—Expands 7 lines; fore wings brassy-brown and shining, with a coppery gloss; hind wings linear-subulate, black and glossy. Taken in the Kentish woods, in June, but very rare.

SPECIES 5.—PANCALIA FUSCO-CUPREA.—(Haworth, etc.; Wood, fig. 1384; and our Plate CXIII., Fig. 16.)—Allied to the preceding, but smaller (expanding 5½ to 6 lines), with broader wings, the fore ones of coppery-brown without spots; the hind ones brown and glossy. Taken near London and Ripley, in June.

SPECIES 6.—PANCALIA MERIANELLA.—(Linnæus, etc.; Wood, fig. 1385; and our Plate CXIII., Fig. 17.)—Expands 6 lines; fore wings black, with three silvery, divaricating fasciæ, being widest apart on the inner margin of the wing; the first simple and oblique, the second flexuous and central, and the third strongly bifid; on the apical margin is also a silvery spot. Taken in the New Forest, and elsewhere, in June.

CALLISTO, STEPHENS.

The palpi are slender, divaricating, and curved upwards; the terminal joint longer than the second, and very slender and acute at the tip; the head clothed with smooth metallic scales; the wings convoluted, the anterior sublinear-triangular; the disk pale, metallic, occasionally with still paler metallic marginal markings.

SPECIES 1.—CALLISTO GUTTEA[q].—(Haworth; Wood, fig. 1386; and our Plate CXIII., Fig. 18.)—Expands 5½ lines; head fulvous; abdomen brown, with a fulvescent anal tuft; fore wings black, with three or four equidistant costal spots, and two alternating in the middle of the inner margin, all white, and occasionally confluent into transverse fasciæ. Taken in woods, at the end of June.

[q] SYNONYME.—*Tinea Merianella*, Hübner.

SPECIES 2.—CALLISTO FYESLELLA[r].—(Fabricius, etc.; Wood, fig. 1387; and our Plate CXIII., Fig. 19.)—Expands 5½ lines; fore wings obscure golden, beyond the middle with five silvery transverse streaks, of which the three outer are abbreviated; at the anal angle is a transverse black stroke, in which are three or four minute silvery dots, and a black dot at the apex. Taken on commons, among rushes, in June.

[r] SYNONYME.—*Phalæna trigutlella*, Donovan.

SPECIES 3.—CALLISTO FUSCO-CUPRELLA[s].—(Haworth, etc.; Wood, fig. 1388; and our Plate CXIII., Fig. 20.)—Expands 5½ lines; head fulvous; fore wings dark golden-coppery, immaculate, but in certain lights with an obsolete purplish-brown tinge; hind wings black; fringe brown. Taken near London, etc., in June, but very rare.

[s] SYNONYME.—*Tinea Erxlebella*, Fabricius (?).

SPECIES 4.—CALLISTO FUSCO-VIRIDELLA.—(Haworth, etc.; Wood, fig. 1389; and our Plate CXIII., Fig. 21.)—Expands 5 to 6 lines; fore wings dark brown-green, or brownish-gold, shining, and without any spots or marks, sometimes ashy-brown without the golden tinge. Taken on heaths, and in places where broom abounds, in June and July.

HARPAGUS, STEPHENS.

The palpi are considerably longer than the head and recurved, with the apical joint slender, and longer than the preceding, with the tip acute; the fore wings slightly depressed in repose; rather long, broader than in the allied genera, rather rounded on the apical margin, with short fringe; they are of a deep black colour, with a single slender, transverse, pale bar; they frequent willows and poplars.

Species 1.—Harpagus cinctellus.—(Linnæus, etc.; Wood, fig. 1390; and our Plate CXIII., Fig. 22.) Expands about 6 lines; wings deep black, fore ones with a slender, silvery, transverse, white fascia in the middle; antennæ annulated with white. In hedges, in June.

Species 2.—Harpagus albistrigellus.—(Stephens; Wood, fig. 1391; and our Plate CXIII., Fig. 23.) —Expands 7 lines; fore wings "deep jet-black, with a slender, slightly-incurved, silvery-white streak towards the inner margin; hind wings deep black, with brown fringe." Near London, in June.

ASTYAGES, Stephens.

The palpi are considerably longer than the head, slightly bent, the terminal joint stouter at the base than the second, gradually attenuated to the tip; the antennæ nearly as long as the wings, slender and simple; the fore wings slightly deflexed during repose, very long, sublanceolate-linear, slightly rounded at the tip, generally of dark colours, and without spots; the legs are long, and with long tibial spurs.

Species 1.—Astyages grandipennis.—(Haworth, etc.; Wood, fig. 1392; and our Plate CXIII., Fig. 24.) —Expands 8½ lines; all the wings glossy, and, as well as the body and antennæ, of a blackish hue; fringe rather paler. Near London and in the New Forest, in June.

Species 2.—Astyages Picæpennis.—(Haworth, etc.)—Expands 5½ lines; all the wings black and glossy, the anterior ones with a strong, irregular, interrupted, white streak in the middle. Taken in Norfolk, etc., in June.

Species 3.—Astyages cylindrella[s].—(Fabricius, etc.; Wood, fig. 1393; and our Plate CXIII., Fig. 25.) —Expands 7 lines; fore wings linear, brown, with three large oblong, yellowish spots, which are occasionally united by slender streaks of the same colour into an irregular series of marks placed longitudinally; wings yellow beneath. In gardens and near poplars, in June.

[s] Synonyme.—*Tinea tristella*, Hübner.

Species 4.—Astyages coracipennella.—(Hübner, etc.; Wood, fig. 1396; and our Plate CXIII., Fig. 26.)—Expands 6 lines; all the wings black and glossy; fringe brownish; antennæ ringed with white. Common in hedges, etc., in June.

Species 5.—Astyages serratella.—(Linnæus, etc.; Wood, fig. 1595; and our Plate CXIII., Fig. 27.)— Expands 6 lines; fore wings pale brownish and glossy; hind ones paler, with ochreous fringe; antennæ ringed with white. Considered by Mr. Haworth as an aged variety of the preceding.

Species 6.—Astyages obscurella.—(Fabricius, etc.; Wood, fig. 1396; and our Plate CXIII., Fig. 28.)— Expands 6 lines; all the wings and fringe brown, shining, and immaculate; antennæ ringed with white. Taken in grassy places, in June.

Species 7.—Astyages Gryphipennella.—(Hübner, etc.; Wood, fig. 1397; and our Plate CXIII., Fig. 29.)—Expands 5½ to 6 lines; wings shining, anterior dull red, sometimes brownish-red, with the costa in certain lights of a reddish hue, or sometimes whitish; hind wings brown. Darenth Wood, etc., in June, but rare.

Species 8.—Astyages lutarea.—(Haworth; Wood, fig. 1398; and our Plate CXIII., Fig. 30.)— Expands 5½ lines; all the wings of a golden-clay colour, shining, and immaculate. Very rare, in June. The caterpillars live in small moveable cases on oak leaves.

SPECIES 9.—ASTYAGES OCHROLEUCELLA.—(Stephens; Wood, fig. 1399; and our Plate CXIII., Fig. 31.)—Expands 6 lines; fore wings shining, pale reddish-ochreous; immaculate, hind wings brownish; fringe somewhat lutescent. Darenth Wood, etc., in June.

SPECIES 10.—ASTYAGES NIGRICELLA.—(Stephens; Wood, fig. 1400; and our Plate CXIII., Fig. 32.)—Expands 5 to 5½ lines; fore wings black, shining, immaculate; hind wings brown; head whitish. Darenth Wood, Dover, etc., in June. The caterpillars are found at the beginning of June, residing in slender cylindrical moveable cases on the leaves of pear-trees.

SPECIES 11.—ASTYAGES FLAVICAPUT.—(Haworth; Wood, fig. 1401; and our Plate CXIII., Fig. 33.)—Expands 6 lines; all the wings black, shining, and immaculate; head yellowish-red; palpi with the tips yellow. Taken in woody places round London, in June.

CHRYSOCORYS, CURTIS.

The antennæ are rather short, and thickly squamose and subserrated; the palpi are rather long, porrected horizontally beyond the head and divaricating, with three joints of nearly equal length, the third slender and acute at the tip; the fore wings deflexed, long, narrow, lanceolate, and slightly hooked at the tip; fringe long; hind legs long, with long spurs. The caterpillar (if Hübner's Tinea Festaliella be congenerous, as Mr. Curtis considers) is sixteen-footed, tuberculated, and bristly; the pupa with several series of dorsal spines, and enclosed within an open network cocoon.

SPECIES 1.—CHRYSOCORYS SCISSELLA.—(Hübner (?). Haworth; Wood, fig. 1402; and our Plate CXIII., Fig. 34.)—Expands 5¼ lines; fore wings of a pale golden-ochre colour; with the costa, a streak along the middle of the wing, dilated in the middle, another along the inner margin, and the apical margin, all dark brown. Taken in hedges, etc., from April to June.

METALLOSETIA, STEPHENS (ENCYCL. METROP.) DAMOPHILA, CURTIS.

The antennæ are slender and nearly as long as the wings, the basal joint apparently dilated; the palpi longer than the head, slightly curved upwards, slender; the second joint long and linear, and the third short and acute at the tip; the fore wings long and lanceolate, folded cylindrically in repose; the fringe very long; the disk metallic; the fringe of the hind wings extremely long. The caterpillars form portable cases, in which they reside, as recently discovered by F. Bond, Esq., thus proving the relationship of the genus to the following.

SPECIES 1.—METALLOSETIA SPISSICORNIS.—(Stephens, Illustr., pl. 41, fig. 1; Wood, fig. 1403; and our Plate CXIII., Fig. 35.)—Expands 5½ lines; fore wings golden or coppery-green, shining, and immaculate; the antennæ spotted black and white in the middle, the tips white; hind wings blackish, with a coppery tinge; fringe pale black. Taken in damp places, in July.

SPECIES 2.—METALLOSETIA TRIFOLII.—(Stephens; Curtis, Brit. Ent., pl. 391; Wood, fig. 1404, and our Plate CXIII., Fig. 36.)—Expands 6 or 7 lines; fore wings shining metallic golden-green, with the costa and tips coppery; hind wings, as well as the fringe, pale black; antennæ with the tips white. Found on the flowers of the trefoil, in July, in various parts of the south of England.

SPECIES 3.—METALLOSETIA BREVICORNIS.—(Dale MSS., Plate CXIII., Fig. 37.)—Expands 5½ lines; fore wings very narrow, splendid coppery, the apical portion gradually becoming of a brilliant purple; hind wings

brown, with a golden gloss; antennæ much shorter than the wings, black, with the base thickened, the extreme apex extremely slender and white. Taken by Mr. Dale in Dorsetshire. Described from Mr. Bentley's cabinet.

PORRECTARIA, Haworth.

The palpi are considerably longer than the head, much porrected, considerably divaricating, with the terminal joint half as long as the preceding, very slender and attenuated to the tip; the antennæ are long and slender, with the basal joint dilated and elongated; the fore wings are long, narrow, lanceolated, and rather hooked at the tip, with very long fringe; the hind wings are also deeply fringed, they are deflexed when at rest. The caterpillars reside in singular moveable cases, of their own formation, within which they assume the pupa state, first attaching the mouth of the case to the plant, and making their exit out of the opposite end. The perfect insects rest with the antennæ stretched out and united in a straight line, like some of the Phryganeidæ.

Species 1.—Porrectaria Anatipennella.—(Hübner, etc.; Wood, fig. 1405; and our Plate CXIII., Fig. 38.)—Expands 6½ to 8 lines; fore wings pure white, with the costa very slenderly and the apex very broadly edged with blackish; hind wings pale brownish; antennæ finely ringed with black. Taken in woods and gardens, in June. The caterpillar feeds on the beech. (Plate CXXIII., Fig. 19.)

Species 2.—Porrectaria Otidipennella.—(Hübner; Stephens; Wood, fig. 1406; and our Plate CXIII., Fig. 39.)—Expands 5 lines; fore wings pale ashy-white, with the tips brownish; hind wings and fringe brownish-ash. Darenth Wood, New Forest, etc., in June.

Species 3.—Porrectaria Anseripennella.—(Hübner; Wood, fig. 1407; and our Plate CXIII., Fig. 40.)—Expands 6 lines; fore wings whitish-ash, with a brownish spot near the extremity of the inner margin; hind wings and fringe brownish. New Forest and near London, in June.

Species 4.—Porrectaria Struthionipennella.—(Hübner; Wood, fig. 1408; and our Plate CXV., Fig. 41.)—Expands 8 lines; fore wings white, with several ochre longitudinal streaks radiating towards the apex; hind wings and fringe brownish. Darenth, New Forest, etc., in June.

Species 5.—Porrectaria ornatipennella.—(Hübner; Haworth; Wood, fig. 1409; and our Plate CXV., Fig. 42.)—Expands 7 to 7½ lines; fore wings luteous, or obscurely sulphur coloured, with several very slender silvery and blackish-brown, longitudinal streaks, more or less connected together; hind wings and fringe brownish. Kentish woods, in June.

Species 6.—Porrectaria ochrea.—(Haworth; Harris, Expos., Pl. III., figs. 2—5 (?); Wood, fig. 1410; and our Plate CXIII., Fig. 43.)—Expands 7 to 9½ lines; fore wings subcaudate, ochreous-brown, with two slender, almost obsolete, abbreviated streaks of silver, seen only in certain positions, one oblique from the base to the anal angle, and the other along the inner margin; hind wings brown and glossy, with brownish fringe. Darenth Wood, June, but very rare.

DESCRIPTION OF PLATE CXIV.

INSECTS.—Fig. 1. Porrectaria gallipennella (the cock's feather).
„ Fig. 2. Porrectaria lineolea (the red-specked).
„ Fig. 3. Porrectaria albicosta (the white-edged).
„ Fig. 4. Porrectaria leucapennella (the lead-coloured).
„ Fig. 5. Porrectaria argentula (the silvered).
„ Fig. 6. Aphelosetia auritella (the eared).
„ Fig. 7. Aphelosetia cygnipennella (the swan's feather.)
„ Fig. 8. Aphelosetia semialbella (the half white).
„ Fig. 9. Aphelosetia triatomea (the treble-atomed white).
„ Fig. 10. Aphelosetia floslactis (the cream-coloured).
„ Fig. 11. Aphelosetia rufocinerea (the red brindled).
„ Fig. 12. Aphelosetia oleella (the small shining brown).
„ Fig. 13. Aphelosetia lucidella (the lucid).
„ Fig. 14. Aphelosetia rufipennella (the red feather).
„ Fig. 15. Aphelosetia fulvescens (the tawny).
„ Fig. 16. Aphelosetia marginea (the bordered straw).
„ Fig. 17. Batia lambdella (the tawny crescent).
„ Fig. 18. Batia lunaris (the lesser tawny crescent).
„ Fig. 19. Batia formosella.
„ Fig. 20. Batia lutarella (the clay).
„ Fig. 21. Batia saturatella (the dark clay).
„ Fig. 22. Batia Panzerella (the Panzerian).
„ Fig. 23. Batia flavifrontella (the yellow head).

INSECTS.—Fig. 24. Achroia alvearia (the honey).
„ Fig. 25. Galleria cereana (the honeycomb).
„ Fig. 26. ———— the caterpillar.
„ Fig. 27. Ilythia sociella (the pale-shouldered).
„ Fig. 28. Ilythia anella (the twin spot).
„ Fig. 29. Senta flammea (the flame).
„ Fig. 30. Senta sericea (the silken).
„ Fig. 31. ———— the caterpillar.
„ Fig. 32. Eudorea Portlandica.
„ Fig. 33. Eudorea cembrella (the large grey).
„ Fig. 34. Eudorea subfusca (the drab grey).
„ Fig. 35. Eudorea dubitalis (the hoary grey).
„ Fig. 36. Eudorea pyralella (the yellow stigmaed grey).
„ Fig. 37. Eudorea tristrigella (the three-streaked grey).
„ Fig. 38. Eudorea pallida (the pale grey).
„ Fig. 39. Eudorea lineola (the striped grey).
„ Fig. 40. Eudorea murana (the wall grey).
„ Fig. 41. Eudorea resinea (the resin grey).

All the insects figured in this plate are from the cabinet of Mr. Bentley, with the exception of 6, 9, 15, 21, 27, and 28, from exceedingly accurate figures in Wood's Index.

The caterpillars are from Hübner and Rœsel.

SPECIES 7.—PORRECTARIA GALLIPENNELLA.—(Hübner; Haworth; Wood, fig. 1411; and our Plate CXIV., Fig. 1.)—Expands 6½ to 7 lines; fore wings fulvous or rufescent, with the costa, inner margin and principal longitudinal vein occasionally slenderly streaked with white beyond the middle of the wing; hind wings rufo-fulvescent, with fulvous fringe; the fore wings are occasionally whitish-fulvous, with the veins and fringe reddish. Taken in grassy places in woods, in June.

SPECIES 8.—PORRECTARIA LINEOLEA.—(Haworth, etc.; Wood, fig. 1412; and our Plate CXIV., Fig. 2.)—Expands 6 lines; fore wings whitish-straw coloured, with the veins marked with interrupted reddish or red streaks; the fringe more or less reddish. Taken near London, and in Surrey and Kent, in June.

SPECIES 9.—PORRECTARIA ALBICOSTA.—(Haworth; Curtis, Brit. Ent., plate 687; Wood, fig. 1413; and our Plate CXIV., Fig. 3.)—Expands 5½ to 6 lines; fore wings rather hooked at the tip, ochreous, rather darker towards the tip, with an entire narrow white margin, a white line reaching from the base to the anal angle, and another on the disk, not extending to the base; hind wings pale ashy; fringe pale yellowish-brown. Taken in June, on nettles, etc., in the same places as the former.

SPECIES 10.—PORRECTARIA LEUCAPENNELLA.—(Hübner; Haworth; Wood, fig. 1414; and our Plate CXIV., Fig. 4.)—Expands 4¼ to 5½ lines; fore wings very acute, whitish-leaden coloured, varying to white, with the costa narrowly white; the veins whitish, but variable in the strength of the colouring. Taken in woods, in June.

SPECIES 11.—PORRECTARIA ARGENTULA.—(Stephens; Wood, fig. 1415; and our Plate CXIV., Fig. 5.)—Expands 4½ to 5½ lines; fore wings silvery-white, with the costa whitish, and the veins streaked with ochre-brown; hind wings and fringe brownish. Taken in woods round London, in June.

Obs.—Porrectaria vibicipennella, Hübner, etc., has been forwarded to us by Mr. Weaver (by whom it was discovered in Worcestershire), together with some other novelties, but unfortunately too late for admission into our plates.

APHELOSETIA, Stephens.

The palpi are drooping, of moderate length, and incurved, with the terminal joint slender and acute at the tip; the antennæ are rather short, the wings slightly deflexed in repose, rather broad and very short, generally plain and palely coloured, without markings, except a few clouded spots in some species; the hind wings are broadish, and the body is short and slender.

Species 1.—Aphelosetia auritella.—(Hübner, etc.; Wood, fig. 1416; and our Plate CXIV., Fig. 6.)—Expands 3½ lines; fore wings snow-white, with a central brown fascia dilated into a triangular patch on the costa, and a smaller one on the inner margin, and with a brown irregular spot near the apex; hind wings ashy-white. Taken in Monk's Wood, Hunts, in June, but very rare.

Species 2.—Aphelosetia Cygnipennella.—(Hübner, etc.; Wood, fig. 1417; and our Plate CXIV., Fig. 7.)—Expands 4½ lines; all the wings and fringe pure white, shining, and immaculate. Taken near Dover and n the fens in Hunts, in June. Rare.

Species 3.—Aphelosetia semialbella.—(Stephens; Wood, fig. 1418; and our Plate CXIV., Fig. 8.)—Expands 4½ to 5 lines; fore wings and fringe clear white; hind wings brownish, with white fringe. Ripley, in June.

Species 4.—Aphelosetia triatomea.—(Haworth, etc.; Wood, fig. 1419; and our Plate CXIV., Fig. 9.)—Expands 3½ lines; fore wings snow-white, with three very minute black dots in a triangle near the anal angle; hind wings brownish. Norfolk and near London, in June.

Species 5.—Aphelosetia floslactis.—(Haworth, etc.; Wood, fig. 1420; and our Plate CXIV., Fig. 10.)—Expands 4 lines; fore wings and fringe pale flavescent; hind wings brown. Near London, in June.

Species 6.—Aphelosetia rufo-cinerea.—(Haworth; Wood, fig. 1421; and our Plate CXIV., Fig. 11.)—Expands 4½ to 5 lines; fore wings and fringe reddish-ashy, varying to whitish, with ashy fringe; hind wings brown. Taken near London, in June.

Species 7.—Aphelosetia oleella.—(Fabricius (?); Haworth, etc.; Wood, fig. 1422; and our Plate CXIV., Fig. 12.)—Expands 3½ to 4 lines; all the wings brownish, shining, and immaculate. Darenth Wood, in June.

Species 8.—Aphelosetia lucidella.—(Stephens; Wood, fig. 1423; and our Plate CXIV., Fig. 13.)—Expands 3½ lines; fore wings fusco-lutescent, shining, immaculate; hind wings fuscescent, with paler fringe. Ripley and Hertford, in June.

Species 9.—Aphelosetia rufipennella.—(Haworth, etc.; Wood, fig. 1424; and our Plate CXIV., Fig. 14.)—Expands 4 lines; head and fore wings red, varying to whitish, with the apical portion darker, varying to reddish; hind wings brown. Woods round London, in June.

Species 10.—Aphelosetia fulvescens.—(Haworth; Stephens; Wood, fig. 1425; and our Plate CXIV., Fig. 15.)—Expands 4 to 4½ lines; fore wings tawny-red, with the costa brownish; the fringe pale ochreous-red; hind wings ashy-brown. Near London and the New Forest, in June.

SPECIES 11.—APHELOSETIA MARGINEA.—(Haworth, etc.; Wood, fig. 1426; and our Plate CXIV., Fig. 15.)—Expands 3 or 4 lines; fore wings fulvous, or dark straw coloured, and immaculate, with the apex broadly margined with brown; hind wings and fringe pale ashy-brown. Woods and forests, in June.

SPECIES 12.—APHELOSETIA SUBOCELLEA.—(Stephens, Ill.)—Expands 4½ lines; fore wings snow-white; apical portion ochreous-ashy, with brown irrorations, with an ocellated spot at the apex; fringe ochre-white; hind wings pale ashy-brown. Ripley, in June.

BATIA, STEPHENS.

The palpi are long, slender, recurved, and divaricating, with the third joint rather shorter than the preceding, more slender and pointed at the tips; the antennæ are moderately long, the abdomen short and slender; the fore wings very much deflexed in repose, sub-elongate-triangular, obliquely truncate along the apical margin, with long, spreading fringe; the disk generally flavescent or ochreous, immaculate or with a slight dark mark on the inner margin near the anal angle.

SPECIES 1.—BATIA LAMBDELLA.—(Haworth; Donovan, 2, plate 37, fig. 2; Wood, fig. 1427; and our Plate CXIV., Fig. 17.)—Expands 6 to 7½ lines; fore wings bright tawny and immaculate, except a strong black triangular mark on the inner margin, beyond the middle, emitting an oblique black line, both edged within with white, so as to resemble the Greek letter lambda; the costa is more or less dusky in certain lights; hind wings pale brown. Woods and forests, in June.

SPECIES 2.—BATIA LUNARIS.—(Haworth; Curtis, plate 543; Wood, fig. 1428; and our Plate CXIV., Fig. 18.)—Expands 5½ lines; fore wings ochreous-orange, with the apical margin darker; costa brownish, a small triangular black patch on the inner margin beyond the middle, with another smaller discoidal one attached to its apex obliquely; hind wings pale grey. Whitethorn hedges and on palings round London and elsewhere, in June.

SPECIES 3.—BATIA FORMOSELLA.—(Plate CXIV., Fig. 19.)—Expands 5 lines; fore wings rich tawny-orange, with a very slender and very deeply angulated white line near the base of the wings, slightly edged with black, and followed by a broad, dark chestnut-brown, central bar, very strongly angulated in the middle on the outside, and narrowed and inflexed towards the inner margin; this is followed by a large, nearly triangular, pale patch on the middle of the costa, being white along the oblique edge of the dark fascia, and followed by a darker orange patch towards the tip of the wing; fringe pale orange; hind wings and fringe pale silky-brown; antennæ annulated with black and white; palpi orange, with the last joint white, with a black tip. Taken, by Mr George Robertson, near Wanstead, Essex. Described from Mr. Bentley's cabinet.

SPECIES 4.—BATIA LUTARELLA.—(Hübner (?); Wood, fig. 1429; and our Plate CXIV., Fig. 20.)—Expands 6 to 7¾ lines; fore wings pale brown, or tawny-luteous, and totally immaculate, occasionally with a fulvous dot on the disk; fringe rather paler; hind wings and fringe brown. Coombe Wood, in June.

SPECIES 5.—BATIA SATURELLA.—(Stephens; Wood, fig. 1430; and our Plate CXIV., Fig. 21.)—Expands 6½ lines; entirely pale ochreous-brown; wings glossy. Darenth Wood, Kent, in June, but very rare.

SPECIES 6.—BATIA PANZERELLA.—(Donovan, 3, pl. 106, fig. 4 (?); Wood, fig. 1431; and our Plate CXIV., Fig. 22.)—Expands 8 to 9 lines (15 lines, according to Mr. Curtis); fore wings yellowish-ash, or ochreous, and immaculate; hind wings pale brownish, with paler fringe. Near London.

SPECIES 7.—BATIA FLAVIFRONTELLA.—(Fabricius, etc.; Wood, fig. 1432; and our Plate CXIV., Fig. 23.)—Expands 9 to 10½ lines (12 lines, according to Mr. Curtis); fore wings ashy, with a slight ochreous tinge, and occasionally with one or two dusky dots on the disk; hind wings obscure ochreous, with a yellowish fringe head dirty yellow. Darenth Wood and Camberwell, but rare.

TINEIDÆ, STEPHENS.

The insects comprised in the present family are distinguished from the Tortricidæ by their narrower wings, as well as by the slenderness of their labial palpi, whilst the great development of the maxillary palpi and the rare occurrence of recurved labial palpi separate them (but by no means satisfactorily) from Yponomeutidæ. The body is generally long and slender; the head often densely clothed with scales in front; the antennæ of moderate length, and slender; the spiral tongue short, the thorax is rarely crested, the legs spurred in the usual manner; the wings are entire, often very narrow, and mostly convoluted in repose; the hind ones of moderate size, and much folded when at rest.

In their preparatory states these insects are variable in their habits, but their larvæ are generally naked or setose, many residing in portable cases formed of various materials, in which they undergo their transformation, whilst others feed upon vegetable substances, some residing within the stems of plants, and others subsisting upon the leaves; a few, however, are subcutaneous, feeding in the interior of leaves. In their perfect state they are mostly of a larger size than the minute gilt species belonging to the preceding family, and in their colouring they rarely exhibit any of that brilliancy of gold and silver with which so many of the latter are ornamented, their usual tints being rather sombre, such as ochre-white or buff, with irregular longitudinal marks or streaks. We know nothing of the exotic species of this and several of the preceding families, nor of their transformations; our arrangements must therefore be considered as unsatisfactory. M. Duponchel has, however, divided them into sixteen groups, according to their habits in the preparatory states, in his memoir, published in the Annals of the Entomological Society of France, for 1838.

ACHROIA, HÜBNER.

The insect forming the type of this genus has much of the habit of the genus Lithosia, but with the wings more rounded, and entire; the palpi are very short, and almost concealed by the scales of the front of the head; the antennæ are short, the body slender and rather elongated, and the fore wings horizontally incumbent during repose, and of plain hues. The caterpillar feeds on the honey in beehives, sometimes greatly damaging the comb as well as destroying the inhabitants. It is fleshy and slightly hairy, and forms a cocoon of very white silk, which is covered with minute black grains of its excrement.

SPECIES 1.—ACHROIA ALVEARIA[t].—(Fabricius, etc.; Wood, fig. 1433; and our Plate CXIV., Fig. 24.)—Expands 8 to 11 lines; entirely pale brownish-ash; fore wings rather darker, with a yellow head. Taken in June, in the neighbourhood of beehives, but rare.

[t] SYNONYME.—*Bombyx cinereola*, Hübner.

GALLERIA, Fabricius.

The palpi of the male are concealed by the scales of the front of the head, but those of the female are porrected and drooping; the body is robust; the wings are somewhat convoluted in repose, being depressed on the back, and compressed at the extremity; they are short and broad, with the apical margin (especially in the males) irregularly lobed near the anal angle. The caterpillars are sixteen-footed, fleshy, and setose, residing in beehives, where they form galleries in the comb, feeding upon the honey.

Species 1.—Galleria cereana[u].—(Fabricius, etc.; Wood, fig. 1434; and our Plate CXIV., Figs. 25, 26.)—Expands 14 to 18 lines; fore wings grey, darker along the apical margin, which is preceded by a curved row of small dark oblong dots; the inner margin with some short purple-chestnut streaks; the wings, in the female, are more purplish-brown, with less grey along the middle; hind wings brown beyond the middle in the male, ochreous-white in the female. Found near beehives, within which the caterpillars reside, and are very destructive. About ten years ago, great numbers were reared by Mr. H. Doubleday, who sent a considerable number for distribution amongst the members of the Entomological Society.

[u] Synonyme.—*Phalæna Tinea mellonella*, Linnæus (female); Donovan, viii., pl. 288; Curtis, pl. 587.

ILYTHIA, Latreille.

The palpi in the male are concealed by the scales of the head, but the labial ones in the female are considerably elongated and horizontally porrected, with the terminal joint deflexed, and longest; the head is tufted in front; the wings are convoluted in repose; the fore ones rather long, and the apical margin rounded; the costa arched in the males (whence the wings are broader), but straight in the females; the body is rather long and cylindric, with a small tuft at the tip. The caterpillar is gregarious, and feeds on honey in the nest of Bombyx lapidarius. In the "Magazine of Natural History," vol. ix., p. 528, I have described an extraordinary mass of the cocoons of the typical species communicated to me by the late Mr. Loudon. Mr. Curtis has given the dissections of the type of this genus as the characters of the following genus.

Species 1.—Ilythia sociella[v].—(Linnæus, etc. (male); Wood, fig. 1435, m, 1436, f; and our Plate CXIV., Fig. 27.)—Expands from 9 to 17 lines; fore wings grey, with an interrupted posterior black line; those of the male with the base hoary, and the apical portion reddish-grey, and those of the female of a greenish-grey, which fades considerably after death to a slightly pinkish tinge, with one, or occasionally two, elongated black marks on the disk. Taken near London, Darenth Wood, Ripley, etc.

[v] Synonymes.—*Tinea tribunella*, W. V.; Hübner (male).
Phalæna Tinea colonella, Linnæus (female); Donovan, viii., pl. 263, f. 2.

Species 2.—Ilythia anella[w].—(Fabricius, etc.; Wood, fig. 1437; and our Plate CXIV., Fig. 28.)—Expands 16 lines; fore wings grey, with two central, somewhat ocellated, black marks, and an interrupted black line at the base of the fringe, which is preceded by a row of dusky, obsolete, longitudinal streaks; hind wings ochre-white. A specimen was formerly taken by Mr. Hatchett, in the Jews' burying-ground at Stepney.

[w] Synonymes.—*Tortrix bipunctata*, Haworth.
Tinea sociella, Hübner.

SENTA, Stephens. MELIA and MELIANA, Curtis.

The labial palpi of the genus, which is closely allied to the preceding, have the second joint longer than the terminal one; they are bent upwards, and only slightly visible from above; the head is tufted in front; the fore wings elongate, lanceolate, and somewhat acute or obtuse at the tip; the body rather long and stoutish, with the tip acute, in the females.

Species 1.—Senta flammea.—(Curtis, Brit. Ent., pl. 201; Wood, fig. 1438; and our Plate CXIV., Fig. 29.)—Expands (according to Mr. Curtis's figure) 20 lines; fore wings somewhat acute at the tip, pale buff, with a brown flame-like space along the centre, narrowed at the base, above which is a short, narrow, ochraceous stripe, five or six minute spots forming a subapical curved line, and the margin with seven minute black dots, the inner margin with dark irrorations; hind wings paler. A single specimen is said to have been taken near Lewisham, in July.

Species 2.—Senta sericea.—(Curtis; Wood, fig. 1439; and our Plate CXIV., Figs. 30, 31.)—Fore wings obtuse at the tip. "This insect has a silky appearance; the thorax and superior wings are dull ochreous with a carneous tinge, minutely freckled with fuscous, and a row of dots at the posterior margin, of the same colour; the body is paler, and the inferior wings almost white; it is not so large as M. flammea. I once took a specimen in a garden in Suffolk, flying late at night, at the end of June, and Mr. Dale took a moth on the 29th of June, at Whittlesea Mere, which I think is the same species."—Curtis.

EUDOREA, Curtis. SCOPARIA, Haworth.

The labial palpi are longer than the head, robust and drooping, with the terminal joint very short and conical; the maxillary palpi are also distinct and porrected horizontally; the body is rather long, and moderately slender; the fore wings slightly deflexed when at rest, forming a triangle; the anterior long and narrow, with the apical margin entire, and rather rounded, generally of pale tints freckled with darker markings having generally two pale, transverse, waved streaks, between which are certain dark markings like letters.

Species 1.—Eudorea Portlandica.—(Dale MSS., and our Plate CXIV., Fig. 32.)—Expands 8 lines; fore wings bone-white, with the base dusky, and an irregular, slightly-curved, brownish-black fascia (thickest in the middle) before the middle of the wings; rather beyond the middle is a smallish, irregular, dark, eye-shaped mark, followed by a slender, abbreviated, dusky streak from the costa; apical margin with a row of dark dots, and a larger dark patch in the middle; fringe white, varied with black interrupted lines. Taken by Mr. Dale, in the Isle of Portland. Described from Mr. Bentley's cabinet.

Species 2.—Eudorea Cembrella.—(Linnæus, etc.; Wood, fig. 1440; and our Plate CXIV., Fig. 32.)—Expands 12 or 13 lines; fore wings ashy, with two obsolete brown strigæ arising from the costa, the first straight, and pale within, but dusky without, and the second is short and brown, and placed beyond the middle, with a brown mark like a Greek letter chi between them; apical margin clouded with brownish. Taken on the trunks of fir-trees, but not common.

Species 3.—Eudorea subfusca.—(Haworth, etc.; Wood, fig. 1441; and our Plate CXIV., Fig. 33.)—Expands 10 to 12 lines; fore wings pale brown, finely irrorated with dusky scales, with two almost obsolete paler streaks, the outer one curved, and bordered inwardly with brown, with a very slightly-defined Greek chi between them; hind wings paler brown; probably a suffused variety of the former.

Species 4.—Eudorea dubitalis.—(Hübner, etc.; Wood, fig. 1442; and our Plate CXIV., Fig. 34.)—Expands 10 lines; fore wings hoary-ash with a slight, dusky, transverse streak near the base, followed by two blackish spots placed transversely, and beyond this, in the middle, a black chi-like mark, and beyond the middle is another brown incurved streak, much narrower, and almost interrupted in the middle with a waved whitish streak adjoining it on each side; hind wings very pale ashy-white. Taken near London, in June and July, on the trunks of trees.

Species 5.—Eudorea Pyralella.—(Hübner, etc.; Wood, fig. 1443; and our Plate CXIV., Fig. 35.)—Expands about 9 lines; fore wings pale buff, with a slender streak before the middle, followed by two yellowish spots, edged with black; in the middle of the wing is a yellowish spot, bearing a letter-like black mark, followed by a slender, waved, fuscous streak, edged outwardly with white, and after which is a brown fascia almost interrupted in the middle; the apical margin with a row of black dots preceded by a pale subapical streak. Common round London.

Species 6.—Eudorea tristrigella.—(Stephens; Wood, fig. 1444; and our Plate CXIV., Fig. 36.)—Expands 7½ to 9 lines; fore wings whitish-brown, with base darker, and three brown waved strigæ: the first, before the middle, having a yellowish spot attached to it externally; the second, oblique and central, but not reaching to the inner margin, with a yellowish spot near the costa; the third, irregular towards the apical margin, followed by a slender, pale, subapical line; the apical margin slightly dotted with brownish. Taken near London and in the New Forest, in June.

Species 7.—Eudorea pallida.—(Curtis, etc.; Wood, fig. 1445; and our Plate CXIV., Fig. 37.)—Expands 6 or 7 lines; fore wings short, broad, and pale brownish-buff; the middle of the disk with three blackish dots, the two anterior placed transversely, and sometimes united by a line, preceded and followed by an obscure streak, and with a subapical row of minute black dots. Whittlesea Mere and Monks' Wood, Hunts, in June.

Species 8.—Eudorea lineola.—(Curtis, etc.; Wood, fig. 1446; and our Plate CXIV., Fig. 38.)—Expands 8 or 9 lines; fore wings ashy, with darker clouds, black spots, and with three whitish strigæ: the first, irregular towards the base; the second, indented before the middle; and the third, incurved towards the apex, adjoining which is a furcate black mark and a dusky cloud, in the middle is a white spot with a black edge like an 8; apical margin with a row of wedge-shaped black dots; the under wings ashy, with a pale sinuated line across. Taken near London and in the north of England, in June.

Species 9.—Eudorea murana—(Curtis, plate 170; Wood, fig. 1447; and our Plate CXIV., Fig. 39.)—Expands 8 or 9 lines; fore wings pale buff, much freckled with black scales and grey clouds; near the base is a slender, transverse, indented streak, bearing two black dashes within, and followed by two black dots before the middle, placed transversely; and at a little distance beyond the middle is an 8-like black mark, followed by a dark grey space, through which runs an oblique, waving, slender, pale striga; apical portion of the wing pale, with a dark grey cloud in the middle of the apical margin, and a marginal row of black dots; hind wings pale ashy-buff, with a darker border. Taken on stone-walls, in Scotland.

Species 10.—Eudorea resinea.—(Haworth; Wood, fig. 1448; and our Plate CXIV., Fig. 40.)—Expands about 8 lines; fore wings ashy, the base with a black dot, and a whitish longitudinal streak extending to a transverse one, followed by two large black dots, the anterior of which reaches to the costa; to these succeed a whitish space, then a brown one bearing a black transverse dot; apical portion of the wing ashy, with a whitish

curved streak, emitting two oblique branches, like an irregularly-formed X, and a row of subapical black dots. Taken on the trunks of fir-trees, in June and July.

DESCRIPTION OF PLATE CXV.

INSECTS.—Fig. 1. Eudorea angustea (the narrow winged grey).
„ Fig. 2. Eudorea pusilla.
„ Fig. 3. Eudorea Mercurella (the small grey).
„ Fig. 4. Phycita nebulella (the ermine knot horn).
„ Fig. 5. Phycita binævella (the double blotched).
„ Fig. 6. Phycita dilutella (the powdered knot horn).
„ Fig. 7. Phycita elutella (the cinereous knot horn).
„ Fig. 8. Phycita rufa (the rufous knot horn).
„ Fig. 9. Phycita angustella (the small ermine knot horn).
„ Fig. 10. Phycita semirufa (the red streaked knot horn).
„ Fig. 11. Phycita bistriga (the double striped red knot horn).
„ Fig. 12. Phycita tumidana (the warted knot horn).
„ Fig. 13. Phycita fascia (the broad barred knot horn).
„ Fig. 14. Phycita advenella (the marbled broad barred knot horn).
„ Fig. 15. Phycita marmorea (the marbled knot horn).
„ Fig. 16. Phycita porphyrea (the porphyry knot horn).
„ Fig. 17. Phycita consociella (the allied knot horn).
„ Fig. 18. Phycita Rhenella (the dove-coloured knot horn).
„ Fig. 19. Phycita pinguis (the tabby knot horn).
„ Fig. 20. Phycita hostilis (the varied knot horn).
„ Fig. 21. Phycita formosa (the beautiful knot horn).
„ Fig. 22. Phycita stigmatella.

INSECTS.—Fig. 23. Phycita obtusa (the blunt-winged knot horn).
„ Fig. 24. Phycita obscura (the obscure knot horn).
„ Fig. 25. Phycita ornatella (the speckled knot horn).
„ Fig. 26. Phycita Abietella (the pine knot horn).
„ Fig. 27. Phycita Roborella (the dotted knot horn).
„ Fig. 28. Phycita legatella (the plain knot horn).
„ Fig. 29. Phycita fusca (the brown knot horn).
„ Fig. 30. Phycita tristrigella (the three-streaked knot horn).
„ Fig. 31. Phycita palumbella (the mealy knot horn).
„ Fig. 32. Homœosoma gemina (the twin barred knot horn).
„ Fig. 33. Homœosoma cinerea.
„ Fig. 34. Nomophila hybridalis (the rush veneer). [See p. 98.]
„ Fig. 35. Oncocera Cardui (the thistle ermine).
„ Fig. 36. Oncocera carnella (the rosy veneer).
„ Fig. 37. Oncocera sanguinella (the buff-edged rosy veneer).
„ Fig. 38. Araxes miniosella (the flame veneer).
„ Fig. 39. Araxes lotella (the pale-edged flame veneer).
„ Fig. 40. Araxes ocellea (the necklace veneer).
„ Fig. 41. Araxes ahenella (the mouse-coloured veneer).
„ Fig. 42. Prionapteryx nebulifera (the clouded veneer).

The insects figured in this plate are from the cabinet of Mr. Bentley, with the exception of Nos. 1, 8, 14, 17, 23, 30, 40, and 42, from the accurate figures of Hübner and Wood. H. N. H.

SPECIES 11.—EUDOREA ANGUSTEA.—(Curtis; Stephens; Wood, fig. 1450; and our Plate CXV., Fig. 1.)—Expands 6 or 7 lines; fore wings narrow, elongated, ashy-brown, with darker clouds, and three whitish streaks: the first, near the base, broadly edged on both sides with brown; the second, strongly incurved beyond the middle (and between these three indistinct dusky marks, the outer one somewhat resembling the Greek chi, placed on a dusky space); the apical portion of the wing brownish, with an outwardly-curved white streak, and a marginal row of black dots. Taken near London and in various parts of Kent, in June.

SPECIES 12.—EUDOREA PUSILLA.—(Plate CXV., Fig. 2.)—Expands 6½ lines; fore wings very pale luteous or straw coloured, slightly irrorated with black scales; an ill-defined, abbreviated, dark fascia towards the base, a central spot also almost obsolete, followed by a slender blackish striga, curved outwardly in the middle, edged outwardly with white, and followed by a dusky space, and a marginal row of black dots; hind wings very pale buff. Taken at Tunbridge, in Kent, and communicated from Mr. Bentley's collection with the above name.

SPECIES 13.—EUDOREA MERCURELLA*.—(Linnæus, etc.; Wood, fig. 1449; and our Plate CXV., Fig. 3.)—Expands about 8 lines; fore wings ashy-buff and clouded, with two irregular, slender, brown, waved streaks in the ordinary position, and between them a whitish patch surrounded by a 8-like black mark; the apical part of the wing darker brown, with irregular whitish transverse streaks, and a row of minute black dots along the apical margin. Common on trunks of trees through the summer.

* SYNONYME.—*Tinea cratægella*, Hübner.

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PHYCITA, Curtis. PHYCIS, Fabricius.

The labial palpi are as long as the head, and recurved in front of the face; the terminal joint being slender, elongate-ovate, and much shorter than the preceding; the maxillary palpi are scarcely visible; the antennæ are long and setaceous, with the second and several following joints producing a large oval mass of scales in the males of some species; the body is rather robust, and the fore wings are convoluted in repose; the anterior elongate-trigonate, with the apical margin rather rounded; the disk often marked with two transverse pale streaks.

Species 1.—Phycita nebulella.—(Hübner, etc.; Wood, fig. 1451; and our Plate CXV., Fig. 4.)—Expands 9 or 10 lines; fore wings glaucous-white, with two or three short black strokes before the middle, arranged transversely, and two others beyond the middle towards the costa, with an obscure dusky streak beyond the latter, and an apical row of small blackish dots, Taken at Darenth and in Epping Forest, in June.

Species 2.—Phycita binævella.—(Germar; Stephens; Wood, fig. 1452; and our Plate CXV., Fig. 5.) Expands 9 lines; fore wings narrow, and more rounded at the tip than in the last species, ashy-buff, with two rather elongate black dots before, and two minute ones beyond the middle, and with an incurved pale streak beyond the latter; hind wings ashy-grey. New Forest, in July.

Species 3.—Phycita dilutella.—(Hübner, etc.; Wood, fig. 1453; and our Plate CXV., Fig. 6.)—Expands 9 lines; fore wings narrow, and ashy coloured, partly irrorated with brown scales, and with two reddish strigæ, partially edged with white, between which is a duplicated black spot, and a row of black dots on the apical margin; hind wings brown. Taken in woods, in June and July.

Species 4.—Phycita elutella.—(Hübner, etc.; Wood, fig. 1454; and our Plate CXV., Fig. 7.)—Expands 8 to 8¾ lines; fore wings narrow, pale ashy, pulverose, with dusky atoms, with two very indistinct palish strigæ, the first rather dusky on the side near the base, and the outer one dusky within; hind wings whitish. Hedges near woods, in June.

Species 5.—Phycita rufa.—(Haworth, etc.; Wood, fig. 1455; and our Plate CXV., Fig. 8.)—Expands 7½ to 8 lines; fore wings narrow, very pale red, with two very faint, paler, transverse strigæ, the outer one bent outwardly; hind wings whitish-ash. Taken in gardens and woods, in July and August.

Species 6.—Phycita angustella.—(Hübner; Wood, fig. 1456; and our Plate CXV., Fig. 9.)—Expands 8 to 8½ lines; fore wings narrow, whitish, rather clouded with ashy, with two very fine brown streaks before, and another darker and much bent beyond the middle, with a dark spot near the former, and four others in a square towards the latter; apical margin with a row of small black dots; hind wings white. Gardens and skirts of woods, in June.

Species 7.—Phycita semirufa.—(Haworth, etc.; Wood, fig. 1457; and our Plate CXV., Fig. 10.)—Expands 8 to 9 lines; fore wings narrow, ashy, slightly atomose, with two almost obsolete darker strigæ, between which is a red patch in the middle of the inner margin; hind wings ashy-white. Woods and forests, in June.

Species 8.—Phycita bistriga.—(Haworth, etc.; Wood, fig. 1458; and our Plate CXV., Fig. 11.)—Expands about 9 lines; fore wings purplish-red, with a whitish transverse striga towards the base, and another

rather curved beyond the middle; the basal and apical parts of the wing duller coloured, the latter with a very faint subapical striga, and a row of minute black dots; hind wings brown. Borders of woods, in June.

SPECIES 9.—PHYCITA TUMIDANA[y].—(Wien. Verz., etc.; Wood, fig. 1459; and our Plate CXV., Fig. 12.)—Expands from 7½ to 10½ lines; fore wings clouded with grey and ferruginous, with a transverse brown striga near the base, edged internally with white; beyond the middle of the disk are two blackish dots, and a very flexuous, whitish, subapical striga, bordered on each side with rusty-brown; hind wings deep brown. Woods and forests, in June.

[y] SYNONYME.—*Tinea verrucella*, Hübner, etc.

SPECIES 10.—PHYCITA FASCIA[z].—(Haworth, etc.; Wood, fig. 1460; and our Plate CXV., Fig. 13.)—Expands 9 lines; fore wings reddish-ash, with a red patch at the base, and a very broad brownish-red or purplish fascia in the middle, edged with brown, and bearing a palish space towards the costa, in which are two black dots. Epping Forest, etc., in June.

[z] SYNONYME.—*Phycis sauvella*, Zincken g. Sommer.

SPECIES 11.—PHYCITA ADVENELLA.—(Zinck. g. Somm., etc.; Wood, fig. 1461; and our Plate CXV., Fig. 14.)—Expands 8 lines; fore wings red at the base, then a nearly straight, but rather oblique, blackish streak, edged inwardly with white, and another more flexuous beyond the middle; the intermediate space chestnut-brown, and clouded with pale greyish-buff; apical portion red-brown. Woods and forests, in June; but rare.

SPECIES 12.—PHYCITA MARMOREA.—(Haworth, etc.; Wood, fig. 1462; and our Plate CXV., Fig. 15.)—Expands 9 lines; fore wings ashy, with a straight, red, central streak, outwardly white, and another slender and waved towards the apical margin; the intermediate space with a black waved fascia, furcate towards the costa, and outwardly edged with white; the disk with a dusky crescent; hind wings brownish. Woods, in June and July.

SPECIES 13.—PHYCITA PORPHYREA.—(Curtis; Wood, fig. 1463; and our Plate CXV., Fig. 16.)—Expands 8½ lines; fore wings varied with bay and dove coloured, with a very oblique white streak towards the base, followed by a triangular dark patch on the costa; on the disk are two brown dots, and beyond these a subapical, waved, pale streak, which becomes white at the costa, edged with ferruginous brown; hind wings brown. Epping and New Forest, in June.

SPECIES 14.—PHYCITA CONSOCIELLA.—(Hübner, etc.; Wood, fig. 1464; and our Plate CXV., Fig. 17.)—Expands 8 lines; fore wings clouded with dusky-ashy and purplish-brown, with a transverse, slightly-curved, rather broad, blackish streak near the base, edged within with white; two small dots on the disk beyond the middle, and a subapical dusky streak, edged with pale brown; hind wings grey. Coombe Wood, end of June.

SPECIES 15.—PHYCITA RHENELLA[a].—(Schiffermüller, etc.; Wood, fig. 1465; and our Plate CXV., Fig. 18.)—Expands 9 or 10 lines; fore wings dove-coloured ashy, with a wide, transverse, brown fascia before the middle, with a short, very oblique, white streak from the costa on its inner margin; in the middle of the disk are two dark dots, and beyond them the wings are reddish-brown, with an obscure, whitish waved striga; hind wings grey-brown. Darenth Wood, Ripley, etc., at the end of July.

[a] SYNONYME.—*Tinea palumbella*, Hübner.

SPECIES 16.—PHYCITA PINGUIS.—(Haworth, etc.; Wood, fig. 1466; Curtis, pl. 233; and our Plate CXV., Fig. 19.)—Expands about 11 lines; fore wings dull pale ochreous, freckled with black; a very large black cloud between the base and middle of the wing, within which is a slender, pale, waved streak, and beyond the middle is another pale waved line, edged with black within, and more suffused towards the apical margin, which has a row of six or seven minute black spots; hind wings paler, with a dark border. Near Chelsea and in the Green Park, by Mr. Marshall, at the beginning of July. Also reared from the end of June to beginning of July, from larvæ; found under the bark of ash-trees, by Mr. Allen. (Zool., 806.)

SPECIES 17.—PHYCITA HOSTILIS.—(Stephens; Wood, fig. 1467; and our Plate CXV., Fig. 20.)—Expands 1 inch; fore wings brownish, the base somewhat ferruginous, towards the middle is a broadish, brownish, waved, dark fascia, including a pale streak, the space beyond this is slightly clouded, and bears a brown lunule near the costa, followed by another dark fascia, in which is a pale waved streak, angulated near the anal angle; the apical margin with an interrupted brown line; hind wings brown. Darenth Wood and Ripley, in June.

SPECIES 18.—PHYCITA FORMOSA.—(Haworth; Wood, fig. 1468; and our Plate CXV., Fig. 21.)—Expands 10 lines; fore wings ashy-red, the base purplish, a deep black, slightly-waved, nearly central fascia, narrowed behind, and enclosing a pale waved line on the inner margin, beyond this is a short black streak, rather oblique, and towards the apical margin is another waved black streak, bearing a pale one; apical margin dotted with black; hind wings brown. Darenth Wood, about the beginning of July, on the whitethorn.

SPECIES 19.—PHYCITA STIGMATELLA.—(Plate CXV., Fig. 22.)—Expands 11 lines; fore wings grey-brown; the costa widely grey, from the base to the middle of the wing, where arises a waved, slender, transverse, white streak; another, more angulated, is placed half-way between it and the apical margin, the intermediate space being greyish-black, with some black stigma-like marks in the middle; the inner margin brown; apical margin grey, with a row of black dots, preceded by a slender, brownish, waved stripe; hind wings and body pale brown. Taken at Coombe Wood, and communicated from Mr. Bentley's cabinet with the above name.

SPECIES 20.—PHYCITA OBTUSA.—(Haworth, etc.; Wood, fig. 1469; and our Plate CXV., Fig. 23.)—Expands 9½ lines; fore wings dusky-black and atomose, sometimes with a reddish tinge, a flexuous, whitish, transverse streak towards the base, a short one arising from the middle of the costa, and a third oblique and waved near the apical margin, which bears a row of brown dots; hind wings whitish-ash. Darenth Wood, June, but very rare.

SPECIES 21.—PHYCITA OBSCURA.—(Stephens; Wood, fig. 1470; and our Plate CXV., Fig. 24.)—Expands 9 lines; all the wings deep brown, the fore ones with dark atoms, and with an obscure ashy dot, encircled with black, beyond the middle, followed by an almost obsolete, whitish, waved line; apical margin with dusky dots. Taken near London, in June, but very rare.

SPECIES 22.—PHYCITA ORNATELLA[b].—(Wien. Verz., etc.; Wood, fig. 1471; and our Plate CXV., Fig. 25.)—Expands 9 to 10½ lines; fore wings brownish, clouded with black and white, and with several longish black spots and dots placed together behind the middle, occasionally preceded on the costa by a chestnut-coloured patch, and beyond this is a white streak, edged within with brown; apical margin white, with black dots; inner margin also dotted with black. Woods and forests, in June.

[b] SYNONYME.—*Tinea cristella* (?); Hübner; Haworth, etc.

SPECIES 23.—PHYCITA ABIETELLA[c].—(Wien. Verz., etc.; Wood, fig. 1472; and our Plate CXV., Fig. 26.)—Expands 10 to 12 lines; fore wings varied with black and hoary, the former colour forming transverse streaks, a distinct whitish streak before, and another, more flexuous, beyond the middle, edged with black within, and between them is a central whitish dot; apical margin dotted with black; hind wings dirty white. Colney Hatch, New Forest, and Devonshire, in June.

[c] SYNONYME.—*Tinea decuriella*, Hübner; Curtis.

SPECIES 24.—PHYCITA ROBORELLA[d].—(Wien. Verz., etc.; and our Plate CXV., Fig. 27.)—Expands 1 inch; fore wings dark purplish-grey, stained in various parts with rusty; before the middle of the wing is a nearly transverse grey stripe, and a more oblique, slender, black, rather wavy line, followed on the inner margin of the wing by a grey space; at a little distance beyond the middle is an irregular, dark, eye-like mark, with a grey centre, and beyond this a slender, blackish, transverse streak, angulated inwardly towards the costa and outwardly edged with grey; apical margin with a row of black dots; hind wings golden-brown. Common near London and elsewhere, in June.

[d] SYNONYME.—*Tinea spissicornis*, Fabricius; Haworth, etc.

SPECIES 25.—PHYCITA LEGATELLA.—(Hübner, etc.; and our Plate CXV., Fig. 28.)—Expands 11 lines; closely allied to the preceding species, of which it is most probably only a variety, having the wings of a more uniform grey-brown tint, entirely destitute of the rusty or purple tinge, and with the markings almost obsolete. Common near London.

SPECIES 26.—PHYCITA CRISTELLA.—(Hübner (?); Haworth, etc.)—Expands 1 inch; fore wings purplish-red, slightly clouded with grey, with two brownish curved streaks, edged with whitish, one sub-basal and the other subapical; hind wings brownish. Common in hedges near woods, at the end of June.

SPECIES 27.—PHYCITA FUSCA.—(Haworth, and our Plate CXV., Fig. 29.)—Expands 1 inch; fore wings sooty-black, with a black patch beyond the middle towards the costa, and another on the costa near the apex, indicating an almost obsolete streak across the wing, angulated towards the costa; apical margin with a row of black dots; hind wings dusky-buff, with darker veins and margin. Taken from fir-trees in June, and described from Mr. Bentley's collection.

SPECIES 28.—PHYCITA TRISTRIGELLA.—(Stephens; Wood, fig. 1473; and our Plate CXV., Fig. 30.)—Expands 11 lines; fore wings brown, with three flexuous whitish streaks: the first sub-basal, the second very oblique and subcentral, and the third, towards the apical margin, between the first and second, and second and third streaks, is a blackish cloud, the latter one towards the costa; apical margin with a row of wedge-shaped dusky dots; hind wings deep brown. Darenth Wood, in June, but very rare.

SPECIES 29—PHYCITA PALUMBELLA.—(Wien. Verz.; Wood, fig. 1474; and our Plate CXV., Fig. 31.)—Expands 12 to 13 lines; fore wings narrow, ashy, with paler clouds in front; before the middle is a ferruginous or rosy fascia, edged with black; in the middle is a black crescent, and beyond this a second rose-coloured fascia, edged with a curved black line within; apical margin with an interrupted black line; hind wings whitish. Taken in woods and forests, in June.

HOMŒOSOMA, Curtis.

The labial palpi are porrected horizontally considerably beyond the head, slender and tapering; the spiral tongue much shorter than the antennæ, which are simple and setaceous; the palpi minute, the abdomen terminated by a pencil of scales; the wings are convoluted in repose, the fore ones narrow, sublanceolate, and rather obtuse; the hind ones simple.

Species 1.—Homœosoma gemina.—(Haworth, etc.; Wood, fig. 1475; and our Plate CXV., Fig. 32.)—Expands 7½ to 9 lines; fore wings pale ochre, with an irregular brown bar in the middle, another forming a border on the apical margin, and a third between them, with a faint crescent attached to it within. Epping Forest, June.

Species 2.—Homœosoma cinerea.—(Plate CXV., Fig. 33.)—Expands 11½ lines; entirely of a pale ashy-buff or stone colour; the hind wings rather lighter in colour, at a little distance before the middle of the fore wings is a very slight, transverse, rather incurved streak, beyond the middle towards the costa is a dusky dot, and between this and the apex is a slender dusky line, angulated towards the costa, where it is most distinct; near the tip of the costa is a slight dusky spot. Taken by Mr. Joseph Standish, near Reading, Berks, and communicated from Mr. Bentley's cabinet with the name employed above.

ONCOCERA, Stephens.

The palpi are four in number; the labial ones long, slender, and erect; the terminal joint long, slender, and acute; the spiral tongue is short; the antennæ in the males are furnished with a tuft of scales at the base; the wings are convoluted in repose, the anterior elongate-triangular, with the apex subtruncate, the hind ones much folded; the body is long and slender, and tufted at the tip, in the males.

Species 1.—Oncocera cardui[e].—(Haworth, etc.; Wood, fig. 1477; and our Plate CXV., Fig. 35.)—Expands 14 or 16 lines; fore wings white, with numerous black dots; hind wings brown, with the base and inner margin white. Taken on thistles, in August, but rare.

[e] Synonyme.—*Tinea cribella*, Hübner.

Species 2.—Oncocera carnella.—(Linnæus, etc.; Wood, fig. 1478; and our Plate CXV., Fig. 36.)—Expands 12 or 14 lines; fore wings rosy-red, sometimes suffused with brown, with the inner margin broadly pale yellow, or buff; hind wings brown. Near London, Dover, Hertford, etc.; July.

Species 3.—Oncocera sanguinella[f].—(Hübner, etc.; Wood, fig. 1479; and our Plate CXV., Fig. 37.)—Expands 12 to 15 lines; fore wings rosy, or blood-red, sometimes suffused with brown; costa pale whitish, and inner margin pale yellow; hind wings brown. Dover, etc., in July and August; probably a variety of the preceding.

[f] Synonyme.—*Phal. Tinea carnella*, Donovan, v., pl. 153, f. 5.

ARAXES, Stephens.

These insects differ from the preceding by having the antennæ simple in both sexes; the labial palpi are also much longer than the head, and horizontally porrected, with the terminal joint attenuated and scarcely deflexed; the fore wings are elongate, sublanceolate, rounded on the apical margin, convoluted in repose, and generally longitudinally divided in their colours, the costa being palest.

Species 1.—Araxes miniosella.—(Germar, etc.; Wood, fig. 1482; and our Plate CXV., Fig. 38.)—Expands 9 to 10 lines; fore wings with the costa broadly whitish; the disk rosy, shaded to ochreous on the inner margin; hind wings ashy-grey, with a reddish tinge. Taken on the coasts of Lancashire, Cumberland, etc., in June.

Species 2.—Araxes lotella.—(Hübner (?); Wood, fig. 1481; and our Plate CXV., Fig. 39.)—Expands 10 lines; fore wings ochraceous, powdered with testaceous; hind wings ashy-grey, with white fringe; probably a variety of the former. Coast of Lancashire, in June.

Species 3.—Araxes ocellea.—(Haworth, etc.; Wood, fig. 1480; and our Plate CXV., Fig. 40.)—Expands 11½ lines; fore wings brownish, with a nearly obsolete, geminated, yellowish striga in the middle, and two or three very short ones at the apex of the costa; apical margin, towards the anal angle, with a row of six ocellated spots with black pupils; hind wings brown, with white fringe. A single specimen, taken near London, is in Mr. Stephens's collection, obtained from that of Mr. Haworth.

Species 4.—Araxes ahenella[g].—(Hübner, etc.; Wood, fig. 1483; and our Plate CXV., Fig. 41.)—Expands 9 to 14 lines; fore wings obscure brown, with a very indistinct, purplish-brown, straight striga before, and another, flexuous, towards the costa, beyond the middle; hind wings paler brown. Darenth Wood, Hertford, etc., in June.

[g] Synonymes.—*Crambus obscuratus*, Haworth.
Palparia tetrix, Haworth.

PRIONAPTERYX, Stephens.

The fore wings of this genus are elongate-triangular, with three or four deep serratures towards the extremity of the costa, and the apical margin deeply emarginate; the labial palpi are rather long, stout, and densely squamose, porrected like a beak; the antennæ of the males are slightly pectinated beneath, and the body is rather long and slender, and slightly tufted at the extremity in the males.

Species 1.—Prionapteryx nebulifera.—(Stephens; Wood, fig. 1484; and our Plate CXV., Fig. 42.)—Expands 9½ lines; fore wings white, costa pale brown, except at the tip; towards the base of the inner margin is an ovate blackish-brown spot, and in the middle a larger irregular one, divided by an indented white streak, another indented white streak near the extremity of the costa; hind wings whitish. A single specimen, of unknown locality, in Mr. Stephens's cabinet.

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DESCRIPTION OF PLATE CXVI.

INSECTS.—Fig. 1. Crambus lythargyrellus (the dark-streaked satin veneer).
„ Fig. 2. Crambus argyreus (the streaked satin veneer).
„ Fig. 3. Crambus arbustorum (the yellow satin veneer).
„ Fig. 4. Crambus argentellus (the white satin veneer).
„ Fig. 5. Crambus dealbellus (the ivory veneer).
„ Fig. 6. Crambus tentaculellus (the Portland veneer).
„ Fig. 7. Crambus hamellus (the pearl streak veneer).
„ Fig. 8. Crambus pascuellus (the inlaid veneer).
„ Fig. 9. Crambus scoticus.
„ Fig. 10. Crambus ericellus (the heath veneer).
„ Fig. 11. Crambus pratellus (the dark inlaid veneer).
„ Fig. 12. Crambus angustellus (the narrow-winged veneer).
„ Fig. 13. Crambus hortuellus (the garden veneer).
„ Fig. 14. Crambus cespitellus (the straw-coloured veneer).
„ Fig. 15. Crambus montanellus (the dark mountain veneer).
„ Fig. 16. Crambus marginellus (the bordered veneer).
„ Fig. 17. Crambus latistrius (the broad-streaked veneer).
„ Fig. 18. Crambus pinetellus (the pearl veneer).
„ Fig. 19. Crambus chrysonuchellus (the powdered veneer).
„ Fig. 20. Crambus rorellus (the chalk-hill veneer).

INSECTS.—Fig. 21. Crambus falsellus (the chequered veneer).
„ Fig. 22. Crambus luteellus (the barred veneer).
„ Fig. 23. Crambus tristis (the dingy veneer).
„ Fig. 24. Crambus inquinatellus (the elbow-striped veneer).
„ Fig. 25. Crambus aridellus (the chalk veneer).
„ Fig. 26. Crambus selasellus (the dark-edged veneer).
„ Fig. 27. Crambus obtusellus (the blunt-winged veneer).
„ Fig. 28. Crambus petrificellus (the common veneer).
„ Fig. 29. Crambus aquilellus (the dusky yellow veneer).
„ Fig. 30. Crambus paleellus (the large yellow veneer).
„ Fig. 31. Crambus culmorum (the brown-edged veneer).
„ Fig. 32. Crambus fuscelinellus (the brown veneer).
„ Fig. 33. Crambus nigristriellus (the black-streaked veneer).
„ Fig. 34. Crambus culmellus (the small straw coloured).
„ Fig. 35. Crambus cerusellus (the dark dwarf veneer).
„ Fig. 36. Crambus pygmæus. 37. A dark variety (the pygmy veneer).
„ Fig. 38. Crambus radiellus (the streaked mountain veneer).
„ Fig. 39. Crambus margaritellus (the pearl-streaked veneer).

The whole of the insects on this plate are from specimens in the rich cabinet of Mr. Bentley.

CRAMBUS, FABRICIUS.

This very extensive genus has the fore wings narrow, obliquely truncated at the extremity, and very much convoluted during repose (whence the name of Close-moths given to these insects); the fore palpi are distinct, the maxillary exserted, and the labial very long, beak-like, and slender, porrected in front of the head, with the third joint long and attenuated; the antennæ all alike in both sexes, and the body is rather short, obtuse, and slightly tufted at the tip in the males. The fore wings are often adorned with metallic, pearly, or pale radiating marks on a yellowish ground, or are more or less silvery. They abound in grassy places.

SPECIES 1.—CRAMBUS LYTHARGYRELLUS.—(Hübner, etc.; Wood, fig. 1485; and our Plate CXVI., Fig. 1.)—Expands 9 to 12 lines; fore wings glossy white, with lurid longitudinal streaks, varying very greatly in extent, being sometimes suffused nearly over the wing, and in others very faint; apical margin with a row of blackish dots; hind wings pale lurid. New Forest, Devonshire, Kent, etc., in July and August.

SPECIES 2.—CRAMBUS ARGYREUS.—(Fabricius, etc.; Wood, fig. 1486; and our Plate CXVI., Fig. 2.)—Expands 11 to 13 lines; fore wings pearl coloured, immaculate, and silky, with longitudinal, tarnished, silvery streaks; the veins edged behind with brownish; hind wings livid-white. Chalky places, Kent, Surrey, etc., in July and August.

SPECIES 3.—CRAMBUS ARBUSTORUM.—(Fabricius, etc.; Wood, fig. 1487; and our Plate CXVI., Fig. 3.)—Expands 11 to 13 lines; fore wings immaculate, silky, with a tarnished silvery gloss; hind wings brown, with white fringe. Near London, Dover, New Forest, etc., in July and August.

SPECIES 4.—CRAMBUS ARGENTELLUS[h].—(Linnæus, etc.; Wood, fig. 1488; and our Plate CXVI., Fig. 4)—Expands 10 to 13 lines; fore wings immaculate, silvery, with a silken gloss; hind wings very pale brown. Taken in chalky places near London, and elsewhere, in July and August.

[h] SYNONYME.—*Tinea perlella*, Hübner.

SPECIES 5.—CRAMBUS DEALBELLUS.—(Thunberg (?); Wood, fig. 1489; and our Plate CXVI., Fig. 5.)—Expands 13 lines; fore wings immaculate silvery, with a silken gloss; hind wings silky-white. Taken in chalky districts, in June and July.

SPECIES 6.—CRAMBUS TENTACULELLUS.—(Hübner; Haworth, etc.; Wood, fig. 1490; and our Plate CXVI., Fig. 6.)—Expands 12 lines; fore wings bay coloured, with the basal half of the costa, and three longitudinal streaks, the middle one broadest, and the others slightly branching at the tip, all of silvery, also with a short, white, slender, subapical, and a golden apical line; hind wings whitish. Coombe Wood, very rare. [The only known specimen in Mr. Bentley's cabinet is stated by Mr. H. Doubleday to be the Crambus intervibrellus, an American insect, and quite distinct from the Linnæan tentaculellus.]

SPECIES 7.—CRAMBUS HAMELLUS[1].—(Thunberg, etc.; Wood, fig. 1491; and our Plate CXVI., Fig. 7.) Expands 11 to 12 lines; fore wings subemarginate at the tip, greyish-brown, with a longitudinal slightly-silvery streak, having a small tooth on its inner edge, and a small, triangular, pale patch on the apical margin, separated from the former by a slender, brown, curved, subapical streak, edged on the outside with white; apical margin with a row of four or five black dots; hind wings brownish-white. Woods and forests, in June.

[1] SYNONYMES.—*Tinea ensigerella*, Hübner.
Palparia baccæstria, Haworth.

SPECIES 8.—CRAMBUS PASCUELLUS.—(Linnæus, etc.; Wood, fig. 1492; and our Plate CXVI., Fig. 8.)—Expands 9 to 10½ lines; fore wings tawny-gold, and rather glossy, with a broad silvery streak, occupying nearly the anterior half of the wing, and terminating with a small oval patch of the same near its extremity, also a small triangular silvery one on the costa, and an interrupted black apical line; hind wings whitish. Common in meadows in June.

SPECIES 9.—CRAMBUS SCOTICUS.—(Plate CXVI., Fig. 9.)—Expands 10 lines; fore wings very pale straw-buff, with a slender brown line along the costa, a white longitudinal lanceolate dash extends from the base to beyond the middle (occupying the space between the subcostal and median veins), angulated at its extremity, and edged with a brown line behind, from whence extend four silvery lines, edged on each side with brown and a central white, somewhat triangular patch, reaching nearly to the apical margin, which is preceded by an angulated silvery streak, and a somewhat ocellated small patch at the apex; along the apical margin are four or five black dots; hind wings very pale whitish-brown. Taken by Mr. Neale, in Scotland. Described from Mr. Bentley's cabinet.

SPECIES 10.—CRAMBUS ERICELLUS.—(Hübner, etc.; Wood, fig. 1494; and our Plate CXVI., Fig. 10.)—Expands 9 lines; fore wings slightly hooked at the tip, of a fulvous-brown, with longitudinal rusty-brown streaks, and an angulated subapical striga of the same colour; a narrow, silvery-white, longitudinal fascia, and a small spot of the same near the apex; hind wings grey-brown. From the north of England and Scotland, in June.

SPECIES 11.—CRAMBUS PRATELLUS.—(Linnæus, etc.; Wood, fig. 1495; and our Plate CXVI., Fig. 11.)—Expands 9 or 10 lines; fore wings slightly hooked, fulvous-brown or whitish, with the base of the costa, a

longitudinal fascia internally bearing a small tooth, and with three small spots towards the apex of the wings, all white; near the apex is an angulated, rusty-brown, transverse, double line; apical margin dotted with black. A very common species throughout the summer.

SPECIES 12.—CRAMBUS ANGUSTELLUS.—(Stephens; Wood, fig. 1496; and our Plate CXVI., Fig. 12.) Expands 9 or 10 lines; fore wings slightly hooked, narrow, pale ashy-brown, with a broad streak on the costa, an abbreviated, discoidal, longitudinal one, and three spots towards the apex, all white; near the apical margin is an angulated whitish line, edged on each side with rusty-brown; apical margin with several pale brown dots; hind wings ashy-brown. Common during the summer.

SPECIES 13.—CRAMBUS HORTUELLUS.—(Hübner, etc.; Wood, fig. 1497; and our Plate CXVI., Fig. 13.)—Expands 10 to 11½ lines; fore wings retuse, luteous-orange, darkish on the costa, with brown streaks variable in intensity between the veins, and with a transverse, subapical, angulated, slightly-silvery streak, and brassy-gold fringe; hind wings ashy-brown. Common in the summer.

SPECIES 14.—CRAMBUS CESPITELLUS[j].—(Hübner, etc.; Wood, fig. 1498; and our Plate CXVI., Fig. 14.)—Expands 10 to 11 lines; fore wings retuse, pale, with the costa brownish, with two transverse brown streaks, one in the middle, oblique and waved, and the other more distinct and darker, with a silvery margin; fringe golden-brass; hind wings brownish-white. Common in the summer, more especially in the New Forest.

[j] SYNONYMES.—*Tinea strigella*, Fabricius.
Tinea chrysonuchella, Wien. Verz.

SPECIES 15.—CRAMBUS MONTANELLUS.—(Stephens; Wood, fig. 1499; and our Plate CXVI., Fig. 15.)—Expands 8 lines; fore wings retuse, brown, with longitudinal radiating streaks, intersected near the apical margin by a silvery angulated line; apical margin with two black dots; fringe golden-brown; hind wings brown. Taken on mountains in the north of England, in July.

SPECIES 16.—CRAMBUS MARGINELLUS.—(Stephens; Wood, fig. 1500; and our Plate CXVI., Fig. 16.)—Expands 8½ lines; fore wings retuse, shining straw coloured, brown, or pale ochreous; apical margin rather more dusky, with three black dots; fringe shining golden; hind wings pale brown. Taken in July, near London.

SPECIES 17.—CRAMBUS LATISTRIUS[k].—(Haworth, etc.; Wood, fig. 1506; and our Plate CXVI., Fig. 17.)—Expands 12 to 15 lines; fore wings narrowish, brown, palest on the inner margin, with a longitudinal, broadish, silvery streak, entire and rather dilated beyond the middle; hind wings brown. Taken in Kent, Norfolk, and the New Forest, in June.

[k] SYNONYME.—*Chilo Leachellus*, Zinck, g. Sommer.

SPECIES 18.—CRAMBUS PINETELLUS[l].—(Linnæus; Donovan, vol. 8, pl. 263, fig. 1; Wood, fig. 1507; and our Plate CXVI., Fig. 18.)—Expands 10 to 12 lines; fore wings orange-clay coloured, with a very broad triangular silvery bar along the middle of the wing, divided by an oblique deep orange-brown line, which is carried round the outer portion, and with a faintly-angulated subapical striga; hind wings pale brownish. Taken in chalky districts, in June, but not common.

[l] SYNONYMES.—*Tinea conchella*, Hübner.
Phalæna virginella, Scopoli.

SPECIES 19.—CRAMBUS CHRYSONUCHELLUS[l].—(Scopoli, etc.; Wood, fig. 1508; and our Plate CXVI., Fig. 19.)—Expands 10½ to 11½ lines; fore wings obtuse, ashy, with brownish atoms, and with olive-brown powdered, longitudinal streaks, a slightly dentated ferruginous striga in the middle, and an arched white line

near the apical margin, internally edged with rusty-brown; hind wings brown. Taken in chalky places, in June.

[l] SYNONYMES.—*Tinea gramella*, Fabricius.
Tinea campella, Hübner; Haworth.

SPECIES 20.—CRAMBUS RORELLUS[m].—(Linnæus, etc.; Wood, fig. 1509; and our Plate CXVI., Fig. 20.)—Expands 11 lines; fore wings obtuse, sulphur-brown, with numerous pale longitudinal streaks, and two transverse, recurved, ferruginous strigæ, one nearly central, and the other subapical; fringe brassy and shining; hind wings ashy. Near London, in June, but extremely rare.

[m] SYNONYMES.—*Tinea craterella*, Scopoli. *Tinea linetella*, Fabricius.
Tinea chrysonuchella, Hübner.

SPECIES 21.—CRAMBUS FALSELLUS[n].—(Wien. Verz., etc.; Wood, fig. 1510; and our Plate CXVI., Fig. 21.)—Expands 9 or 10 lines; fore wings obtuse, varied with dull pale buff and brown, with a wedge-shaped, white, longitudinal patch on the disk, bearing a brown spot behind; apical portion with slight, longitudinal, brown streaks, and a repanded, waved, brown striga; hind wings dull ashy. Common round London, etc., in June.

[n] SYNONYME.—*Tinea abruptella*, Thunberg.

SPECIES 22.—CRAMBUS LUTEELLUS[o]—(Wien. Verz., etc.; Wood, fig. 1511; and our Plate CXVI., Fig. 22.)—Expands 10 to 11 lines; fore wings obtuse, and dusky on the inner margin, those of the male ochraceous, with slight, dusky, longitudinal streaks, and two transverse, obscure, repanded, brown strigæ; fringe brassy, shining; those of the female mouse-brown, with paler longitudinal streaks, and two very faint, transverse, repanded strigæ; hind wings ashy (male), fuscous (female). Common in June, in woods.

[o] SYNONYMES.—*Tinea ochrella*, Hübner. *Tinea exsoletella*, Hübner.
Palparia rorea, Haworth.

SPECIES 23.—CRAMBUS TRISTIS[p].—(Haworth; Wood, fig. 1512; and our Plate CXVI., Fig. 23.)—Expands 11 lines; fore wings obtuse, reddish-brown, immaculate; hind wings brown. Taken in woods and forests, in June.

[p] SYNONYME.—*Tinea tristella*, Fabricius (?).

SPECIES 24.—CRAMBUS INQUINATELLUS[q].—(Wien. Verz., etc.; Wood, fig. 1513; and our Plate CXVI., Fig. 24.)—Expands 10—11 lines; fore wings obtuse, yellowish-ashy, or mouse coloured, with two very much angulated, transverse, brown strigæ, one in the middle, the other subapical, and whitish externally; apical margin with a row of small black dots; fringe pale shining gold; hind wings dull brown. In woods, in June.

[q] SYNONYME.—*Palparia geniculea*, Haworth.

SPECIES 25.—CRAMBUS ARIDELLUS.—(Thunberg, etc.; Wood, fig. 1514; and our Plate CXVI., Fig. 25.)—Expands 11 lines; fore wings obtuse, yellowish-ashy, with a brown transverse line in the middle extending on the inner margin to the base, followed by another very flexuous striga; apical margin with a row of black dots; fringe glossy; hind wings whitish. Taken at Darenth Wood, at the beginning of July.

SPECIES 26.—CRAMBUS SELASELLUS.—(Hübner, etc.; Wood, fig. 1515; and our Plate CXVI., Fig. 26.)—Expands 10—12 lines; fore wings broadish, pale ochreous or brownish, with a slightly silvery, abbreviated, longitudinal fascia in the middle, outwardly edged with black, and slightly serrated within towards the bifid apex; hind wings dull brown. Near London, New Forest, etc., in July.

SPECIES 27.—CRAMBUS OBTUSELLUS.—(Stephens; Wood, fig. 1516; and our Plate CXVI., Fig. 27.)—Expands 9½ lines; fore wings broad, obtuse, and brown, with a faintly silvery longitudinal streak, slightly furcate at the apex, and inwardly subserrated; apical margin with a dusky line; fringe slightly metallic; hind wings brown. Taken near Ripley and elsewhere, in June.

SPECIES 28.—CRAMBUS PETRIFICELLUS.—(Hübner, etc.; Wood, fig. 1517; and our Plate CXVI., Fig. 28.) Expands 10 lines; fore wings broad and short, pale yellow, with brown atoms, a longitudinal pearly-white streak branching into four towards the apex, and with a transverse repanded line, edged within with whitish; hind wings pale ashy. Round London, in June.

SPECIES 29.—CRAMBUS AQUILELLUS.—(Hübner and Wood, fig. 1518; and our Plate CXVI., Fig. 29.)—Expands 1 inch; fore wings narrow, lutescent, with the costa broadly brown, a longitudinal silvery streak sometimes nearly obsolete along the middle, and a nearly obsolete, subapical, brown line; hind wings ashy. Taken in meadows, etc., in June and July.

SPECIES 30.—CRAMBUS PALEELLUS[r].—(Hübner, etc.; Wood, fig. 1519; and our Plate CXVI., Fig. 30.) —Expands 12 to 14 lines; fore wings narrow, pale luteous, or ochreous, with a slender, silvery-white, longitudinal streak, more or less distinct, and bordered narrowly with brown, scarcely reaching beyond the middle of the wing; hind wings brown. Common, in July, in meadows, etc.

[r] SYNONYME.—*Tinea exoletella*, Wien. Verz.

SPECIES 31.—CRAMBUS CULMORUM.—(Fabricius, etc.; Wood, fig. 1520; and our Plate CXVI., Fig. 31.)—Expands 13 lines; fore wings narrow, ashy-brown, with a broad, brown, costal margin, and with a slender, central, silvery-white streak, subramose at the extremity; hind wings brown. Common in June and July.

SPECIES 32.—CRAMBUS FUSCELINELLUS.—(Schrank, etc.; Wood, fig. 1521; and our Plate CXVI., Fig. 32.)—Expands 10 to 13 lines; fore wings narrow, brownish, with a longitudinal, central, white streak, edged on the outside with black, and not ramose at the extremity; hind wings ashy-brown. Common in meadows, etc., in June and July.

SPECIES 33.—CRAMBUS NIGRISTRIELLUS.—(Stephens; Wood, fig. 1522; and our Plate CXVI., Fig. 33.)—Expands 13 lines; fore wings very narrow, pale ochreous, irrorated with brown, especially towards the inner margin, with a longitudinal, black, somewhat interrupted streak, slightly branched at its extremity; hind wings ashy. Near Ripley, in July.

SPECIES 34.—CRAMBUS CULMELLUS[s].—(Linnæus, etc.; Wood, fig. 1501; and our Plate CXVI., Fig. 34.) —Expands 7 to 9½ lines; fore wings somewhat retuse, pale straw coloured, or ochreous, with the costa darker, with almost obsolete, longitudinal, pulverose brown streaks on the disk; the fringe golden-ashy; apical margin with a row of minute black dots; hind wings ashy. Common during the summer.

[s] SYNONYME.—*Tinea straminella*, Hübner.
Palparia striga, Haworth.

SPECIES 35.—CRAMBUS CERUSELLUS[t]—(Stephens; Wood, fig. 1502; and our Plate CXVI., Fig. 35.)—Expands ½ an inch; fore wings somewhat retuse, those of the males brownish, or pitchy, with two transverse biangulated ferruginous lines towards the apex, and three black dots on the apical margin near the anal angle;

hind wings dull ashy; those of the female hoary, with two biangulated, transverse, whitish lines; hind wings ashy-brown. Taken in Kent and Devonshire, in July.

† SYNONYMES.—*Tinea auriferella*, Hübner, etc.; Stephens's Cat. (male).
Tinea barbella, Hübner, etc. (female).

SPECIES 36.—CRAMBUS PYGMÆUS.—(Haworth; Stephens; Wood, fig. 1503; and our Plate CXVI., Figs. 36, 37.)—Expands 5½ lines; fore wings subretuse, whitish, or ochreous-white, with three angulated, brown, transverse streaks towards the extremity, edged with whitish on the inner margin; apical margin with three or four small black dots behind; hind wings ashy-brown. Taken in the Isle of Wight, in July.

SPECIES 37.—CRAMBUS RADIELLUS.—(Curtis, Brit. Ent., pl. 109; Wood, fig. 1504; and our Plate CXVI., Fig. 38.)—Expands 9 to 10½ lines; fore wings dull red-ochreous, darkest towards the base, and with a silvery-white line in the centre, dilated towards its apex near the apical margin, where it is obliquely truncate, and is radiated or angulated on the internal edge; hind wings very pale yellow, and irrorated with brown. Common on mountains in the north of England, in July.

SPECIES 38.—CRAMBUS MARGARITELLUS.—(Fabricius, etc.; Stephens, Ill., pl. 40, fig. 3; Wood, fig. 1505; and our Plate CXVI., Fig. 39.)—Expands 9 to 11 lines; fore wings with the costa broadly deep chestnut-brown, the inner margin pale orange, with a central, longitudinal, silvery-white stripe, much dilated beyond the middle of the wing, with its tip acute; hind wings dull brown, with pale ochreous fringe. Near Birmingham, in June.

SPECIES 39.—CRAMBUS DUMETELLUS.—(Hübner; Stephens, etc.; Wood, fig. 1493.)—Expands 9 to 10 lines; fore wings subemarginate, dull tawny; with the base of the costa, a longitudinal central fascia, bearing a small tooth within, and three spots towards the extremity of the wing, all silvery; also, with a subapical angulated and geminated rusty striga; hind wings ashy. New Forest, June.

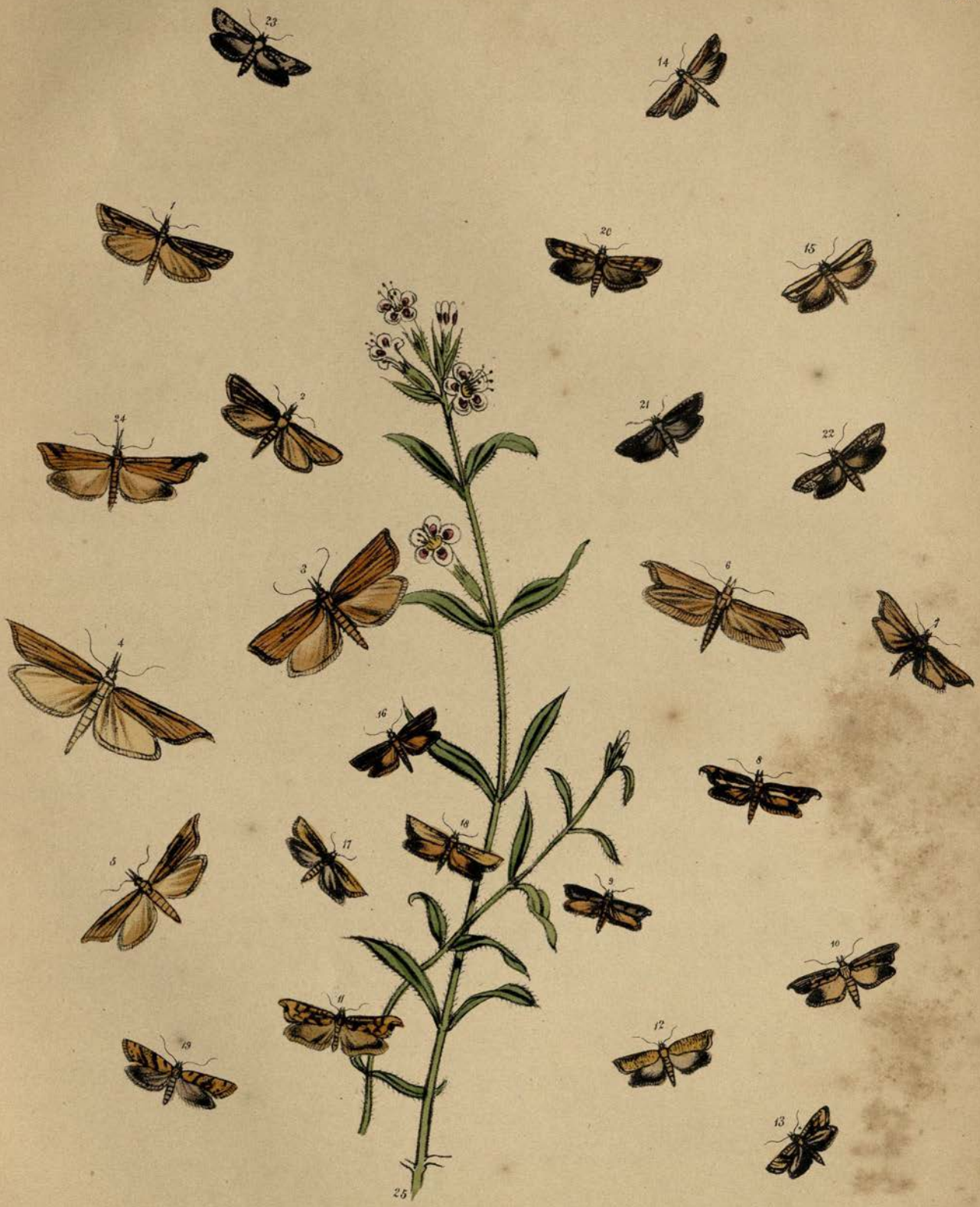
DESCRIPTION OF PLATE CXVII.

INSECTS.—Fig. 1. Chilo forficellus (the aquatic veneer).
„ Fig. 2. Chilo fumeus (the smoky veneer).
„ Fig. 3. Chilo punctigerellus (the dark wainscot veneer).
„ Fig. 4. Chilo phragmitellus (the wainscot veneer).
„ Fig. 5. Chilo gigantellus (the gigantic veneer).
„ Fig. 6. Theristis acinacidella (the narrow-winged veneer).
„ Fig. 7. Theristis nemorella (the pale hook-tip veneer).
„ Fig. 8. Harpipteryx dentella (the tooth-streaked hook-tip).
„ Fig. 9. Harpipteryx falcella (the dark hook-tip).
„ Fig. 10. Harpipteryx scabrella (the wainscot hook-tip).
„ Fig. 11. Hypsolopha asperella (the chequered hook-tip).
„ Fig. 12. Hypsolopha antennella (the netted hook-tip).
„ Fig. 13. Hypsolopha persicella (the double-barred).
INSECTS.—Fig. 14. Chœtochilus costellus (the white-shouldered).
„ Fig. 15. Chœtochilus fissellus (the broad streak).
„ Fig. 16 Chœtochilus radiatellus (the radiated).
„ Fig. 17. Chœtochilus variellus (the variable autumn).
„ Fig. 18. A variety.
„ Fig. 19. Chœtochilus sylvellus (the wood autumn).
„ Fig. 20. Chœtochilus rufimitrellus (the red-headed autumn).
„ Fig. 21. Chœtochilus maurellus (the dingy autumn).
„ Fig. 22. Chœtochilus vittellus (the black-back).
„ Fig. 23. Chœtochilus sequellus (the small marvel du jour).
PLANT. — Fig. 24. Silene quinquevulnera (variegated catchfly).

The whole of the insects figured in this plate are from the cabinet of Mr. Bentley.

CHILO, ZINCKEN G. SOMMER.

The insects of this genus differ from the Crambi in their larger size and in the much greater length of their porrected labial palpi; the antennæ are slightly hairy in the males, and simple in the females; the spiral tongue is very short; the fore wings are generally broader in the males and truncated obliquely, whilst those of the females are narrow, lanceolate, and slightly falcate at the tips; the caterpillars are naked, with the head and thorax horny, and with sixteen feet, and the chrysalis is enclosed in a cocoon, in reeds, etc.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SPECIES 1.—CHILO FORFICELLUS[u].—(Thunberg, etc.; Wood, fig. 1523; and our Plate CXVII., Fig. 1.)—Expands 10 to 14 lines; fore wings of the male pale ochraceous, with an ill-defined brown streak from the base nearly to the tip, a discoidal brown dot, an oblique brown streak extending from the apical angle, and an apical row of small brown dots; those of the female narrower, more acute and paler, with a more distinct, longitudinal, dark streak; hind wings pale or white; the markings vary in intensity. Taken in marshy places round London and elsewhere, in June.

[u] SYNONYMES.—*Tinea consortella*, Hübner, Haworth (male).
Tinea lanceolella, Hübner; Curtis, Brit. Ent., pl. 727 (female). *Palparia hirta*, Haworth (variety).

SPECIES 2.—CHILO FUMEUS.—(Haworth, etc.; Wood, fig. 1524; and our Plate CXVII., Fig. 2.)—Expands 12 to 13½ lines; fore wings obtuse, dusky-straw coloured, with a darker broad costal margin, a discoidal brown dot, and all the wings with an oblique, subapical, dusky, abbreviated fascia; the markings are occasionally much less distinct. Very rare; in marshy places; and supposed by Stephens to be a variety of the preceding.

SPECIES 3.—CHILO PUNCTIGERELLUS.—(Stephens; Wood, fig. 1525; and our Plate CXVII., Fig. 3.)—Expands 13 lines; fore wings obtuse, pale brownish, with more dusky cloudings; the apical margin with a row of brown dots; hind wings whitish, with a slight, interrupted, submarginal streak, and a few minute, blackish, apical dots. Very rare. Whittlesea Mere, in July.

SPECIES 4.—CHILO PHRAGMITELLUS[v].—(Hübner, etc.; Wood, fig. 1526; and our Plate CXVII., Fig. 4.)—Expands 10 to 16 lines; fore wings of the male retuse, acuminated, sublanceolate in the female, straw or clay coloured, more or less distinctly streaked with dusky, the middle with a black dot, and a row of minute apical dots; hind wings whitish, with a faint row of apical dusky dots. Whittlesea Mere, etc., in June.

[v] SYNONYME.—*Palparia rhombea*, Haworth.

SPECIES 5.—CHILO GIGANTELLUS[w].—(Wien. Verz., etc.; Wood, fig. 1527 (?); and our Plate CXVII., Fig. 5.)—Expands 18 to 20 lines; fore wings acuminate at the tip, ashy-yellowish, immaculate, the apex obscurely streaked, and the inner margin slightly dusky-atomose; hind wings glossy white. The caterpillar feeds during the summer on the stems of Arundo Phragmites. Very rare; in marshes. [This insect has been ascertained by Mr. S. Stevens to be the female of Chilo phragmitellus; it is found from June till September.]

[w] SYNONYME.—*Lithosia convoluta*, Fabricius.

SPECIES 6.—CHILO CAUDELLUS[x].—(Linnæus, etc.; Wood, fig. 1528 ?)—Expands 15 lines; fore wings subcaudate, those of the male greyish-testaceous, with a longitudinal brownish streak, and a pale costa, those of the female narrower and paler, without the brown streak. Taken in marshes and woods in Kent, where Iris pseudacorus abounds.

[x] SYNONYMES.—*Tinea mucronella*, Wien. Verz., etc.
Tinea acuminella, Hübner.

THERISTIS, HÜBNER, STEPHENS. PLUTELLA, PARS SCHRANK, STEPH. (CAT.)

These insects approach those of the preceding genus in the long porrected labial palpi; but in this group this appearance is produced by the greatly elongated scales with which they are clothed, the third slender joint being visible on their upper margin, near the middle, like a spur; the fore wings are very long and narrow, with their tips acutely falcate; they are slightly convoluted in repose; the body and legs are long and slender.

SPECIES 1.—THERISTIS ACINACIDELLA[y].—(Hübner, etc.; Steph., Ill., pl. 40, fig. 1; Wood, fig. 1529; and our Plate CXVII., Fig. 6.)—Expands 14 to 16 lines; fore wings very narrow, ochreous-straw coloured, with numerous black atoms, sometimes forming streaks, one towards the base of the wings being rather large; hind wings whitish, shining, with very long straw-coloured fringe. The caterpillar feeds on Euonymus Europæus. Taken, in the autumn, in marshes and woods; Kent, Dorsetshire, etc., but very rare.

[y] SYNONYME.—*Tinea cultrella*, Hübner; Curtis.

SPECIES 2.—THERISTIS NEMORELLA[z].—(Linnæus, etc.; Wood, fig. 1530; and our Plate CXVII., Fig. 7.)—Expands 10 to 11 lines; fore wings not so narrow as in the preceding, falcate at the tip, straw coloured, streaked with brown, and with a central black spot; hind wings whitish, with the tips darker. Taken in woods and marshes through the summer. The caterpillar feeds on Lonicera caprifolium.

[z] SYNONYME.—*Tinea hamella*, Hübner.

HARPIPTERYX, HÜBNER.

These insects are closely allied to the preceding, but have the wings broader, with the tips strongly falcate, with dark streaks, and the inner margin pale; the labial palpi are formed, as in the preceding group, with the spiral tongue short; the wings are deflexed at the sides of the body in repose. The caterpillars are spindle-shaped, with sixteen feet. They form fusiform cocoons open at each end.

SPECIES 1.—HARPIPTERYX DENTELLA[a].—(Fabricius, etc.; Wood, fig. 1531; and our Plate CXVII., Fig. 8.)—Expands 8 to 9½ lines; fore wings very falcate, purplish-brown; the inner margin with a waved white streak emitting a branch towards the costa beyond the middle; hind wings brown. The caterpillar feeds on the honeysuckle; and the moth appears through the summer, and is common in gardens.

[a] SYNONYME.—*Tinea harpella*, Hübner; Curtis.

SPECIES 2.—HARPIPTERYX FALCELLA[b].—(Hübner (?); Stephens; Wood, fig. 1532; and our Plate CXVII., Fig. 9.)—Expands 8 to 10 lines; fore wings deep ashy-brown, with a purplish-copper tinge, with darker atoms; the inner margin ashy-whitish, with two or three black patches; hind wings ashy-grey, slightly metallic. New Forest, in the summer.

[b] SYNONYME.—*Harpipteryx subfalcatella*, Blunt MS.; Curtis.

SPECIES 3.—HARPIPTERYX SCABRELLA[c].—(Linnæus; Curtis, Brit. Ent., pl. 535; Wood, fig. 1533; and our Plate CXVII., Fig. 10.)—Expands 9 to 10 lines; fore wings falcate, with the costal portion pale buff, with dusky streaks; the inner portion dull castaneous-purple, with incomplete pale striæ, and black tufts of scales; hind wings whitish, with the margin brownish. It varies considerably in the strength of its markings. It is stated to feed on the common plum. The moth appears in June and July.

[c] SYNONYME.—*Tinea pterodactylella*, Hübner; Haworth.

HYPSOLOPHA, HÜBNER.

This genus has the labial palpi straight, and directed forwards; the tip clothed with long scales forming a deflexed beak; in one species the fore wings are strongly falcate, as in the preceding, the others have the apical margin truncate, and the tip acute; the head has a short crest of scales, and the body is rather long and slender.

SPECIES 1.—HYPSOLOPHA ASPERELLA[d].—(Linnæus, etc.; Wood, fig. 1534; and our Plate CXVII., Fig. 11.)—Expands 7½ to 9 lines; fore wings yellowish-white, rough, the disk with obscure atoms, the inner margin with two black patches, forming the base of an ochraceous, angulated mark extending into the disk of the wing; the apical portion also dotted with black; the tip strongly falcate. The caterpillar feeds on apple and other fruit trees, and the moth appears in autumn. Taken by Mr. Dale, in Dorsetshire, etc.

[d] SYNONYME.—*Phalæna Tinea falcatella*, Donovan, x., pl. 355, fig. 5.

SPECIES 2.—HYPSOLOPHA ANTENNELLA[e].—(Wien. Verz.; Steph., etc.; Wood, fig. 1535; and our Plate CXVII., Fig. 12.)—Expands 8 or 9 lines; fore wings retuse, with the tip mucronated, of a yellowish colour, thickly irrorated with pale brown net-like marks; hind wings pale brown; front of body white. Woods, in Surrey and Kent, in July and August.

[e] SYNONYME.—*Hypsolophus mucronellus*, Hübner; Haworth.

SPECIES 3.—HYPSOLOPHA PERSICELLA[f].—(Wien. Verz.; Steph.; Wood, fig. 1536; and our Plate CXVII., Fig. 13.)—Expands 9½ lines; fore wings bright golden-red, shining, with two oblique, dusky, abbreviated fasciæ extending from the inner margin; hind wings ashy. The caterpillar feeds on fruit-trees, and the moth appears in July; New Forest, etc.

[f] SYNONYMES.—*Ypsolophus nemorum*, Fabr.; Leach.
Tinea sylvella, Hübner; Curtis.

CHÆTOCHILUS, STEPHENS. YPSOLOPHUS, CURTIS.

The labial palpi are rather long, curved upwards, with long scales directed forwards like a beak, the last joint rising from them like a spur, on the middle of the upper edge; the antennæ are rather long and slender, and recurved during rest; the head is tufted in front, and the fore wings are very long, narrow, lanceolate, and incumbent during repose.

SPECIES 1.—CHÆTOCHILUS COSTELLUS[g].—(Fabricius, etc.; Wood, fig. 1537; and our Plate CXVII., Fig. 14.)—Expands about 8 lines, extremely variable; fore wings golden-brown, ochreous-white, whitish or white; more or less thickly spotted with brown, reddish-ash, brownish or black, with a large, oblong, whitish patch at the base towards the costa, and occasionally a second one towards the hinder angle; hind wings ashy or paler. Very common in woods, etc., in August and September.

[g] SYNONYME.—*Ypsolophus ochroleucus, ermineus, and ustulatus*, Haworth (varieties).

SPECIES 2.—CHÆTOCHILUS FISSELLUS[h].—(Hübner, etc.; Wood, fig. 1538; and our Plate CXVII., Fig. 15.)—Expands 8 to 9 lines; fore wings white, ochreous-brown, or reddish, with a straight, broad, black streak from the base to the tip, bearing a darker dot towards the apex; hind wings and fringe brown. Common in woods, in the autumn.

SPECIES 3.—CHÆTOCHILUS RADIATELLUS.—(Donovan, 3, pl. 77, figs. 3, 4, etc.; Wood, fig. 1539; and our Plate CXVII., Fig. 16.)—Expands 8 to 9½ lines; fore wings shining golden-red, reddish or brownish, with various more or less distinct, paler, radiating markings on the darker ground, or dark radii on the lighter ground, and a slender central one darker; occasionally varied with black spots, and with a conspicuous black dot near the apex. Taken in woods, in the autumn.

SPECIES 4.—CHÆTOCHILUS VARIELLUS[h].—(Hübner, etc.; Wood, fig. 1540; and our Plate CXVII., Figs. 17, 18.)—Expands 8 or 9 lines. This is also an extremely variable species; fore wings rufous, golden-red,

brown, clay coloured, or whitish, varied and spotted with black or brown, and with a short black streak at the base of the inner margin, and a black dot near the apex. Common in woods, etc., in the autumn.

[h] SYNONYME.—*Ypsolophus 5-punctatus, lutosus, and flaviciliatus,* Haworth (varieties).

SPECIES 5.—CHÆTOCHILUS SYLVELLUS[i].—(Hübner; Stephens; Wood, fig. 1541; and our Plate CXVII., Fig. 19.)—Expands 8½ to 9 lines; fore wings golden-brown, shining, with two oblique rusty fasciæ in the middle; the first nearly straight, and the second rather curved; hind wings ashy-grey. In woods, etc., in September.

[i] SYNONYME—*Ypsolophus bifasciatus,* Haworth.

SPECIES 6.—CHÆTOCHILUS RUFIMETRELLUS.—(Hübner, etc.; Wood, fig. 1542; and our Plate CXVII., Fig. 20.)—Expands 8 to 9 lines; fore wings blackish, more or less obsoletely varied with brown clouds; hind wings ashy-brown, forehead red. Near London, in the autumn.

SPECIES 7.—CHÆTOCHILUS MAURELLUS.—(Wien. Verz., etc.; Wood, fig. 1543; and our Plate CXVII., Fig. 21.)—Expands 8 to 9 lines; fore wings deep black, varying to dusky, with a bluish or purplish gloss, and sometimes with the costa broadly but irregularly paler brownish; hind wings dusky and shining. Round London, in the autumn.

SPECIES 8.—CHÆTOCHILUS VITTELLUS.—(Linn., Faun. Suec., etc.; Wood, fig. 1544; and our Plate CXVII., Fig. 22.)—Expands 7 to 8½ lines; fore wings ashy, more or less clouded, with an irregular black streak along the inner margin (sometimes nearly half the width of the wing), and some obscure black dots on the apical margin; hind wings ashy-brown, and glossy. Common in woods, on trunks of trees, and in hedges, in the autumn.

SPECIES 9.—CHÆTOCHILUS SEQUELLUS.—(Linnæus, etc.; Steph. Ill., pl. 40, fig. 2; Wood, fig. 1545; and our Plate CXVII., Fig. 23.)—Expands 8½ to 10 lines; fore wings white or whitish, with numerous short, black, irregular streaks and dots on the costa, some being furcate, and others connected together on the disk, and with several large black patches on the inner margin, which are united into a continuous, irregular streak; hind wings pale ashy-brown. Taken in July and August, at Westerham and Darenth, and near Ripley.

DESCRIPTION OF PLATE CXVIII.

INSECTS.—Fig. 1. Cerostoma porrectella (the grey streak).
„ Fig. 2. Cerostoma annulatella (the annulated).
„ Fig. 3. Cerostoma maculipennis (the spotted winged).
„ Fig. 4. Cerostoma xylostella (the honeysuckle).
„ Fig. 5. Tinea tapetzella (the black-cloaked woollen).
„ Fig. 6. Tinea semifulvella (the fulvous tip).
„ Fig. 7. Tinea ustella (the white-backed black).
„ Fig. 8. Tinea flavicostella.
„ Fig. 9. Tinea fuscipunctella (the brown-dotted woollen).
„ Fig. 10. Tinea pelionella (the single-spotted woollen).
„ Fig. 11. Tinea nigripunctella (the many-spotted yellow).
„ Fig. 12. Tinea albipunctella (the white-speckled black).
„ Fig. 13. Tinea flavescentella (the triple-spotted buff).
INSECTS.—Fig. 14. Tinea lappella (the triple-spotted yellow).
„ Fig. 15. Tinea sulphurella (the sulphur).
„ Fig. 16. Tinea destructor (the destructive).
„ Fig. 17. Tinea cloacella (the dark-mottled woollen).
„ Fig. 18. Tinea granella (the mottled woollen).
„ Fig. 19. Tinea parasitella (the light-brindled woollen).
„ Fig. 20. Tinea corticella (the bark).
„ Fig. 21. Euplocamus mediellus (the agaric).
PLANT. — Fig. 22. Cucubalus baccifer (berry-bearing campion).

The insects figured in this plate are from the cabinet of Mr. Bentley, with the exception of Albipunctella, Sulphurella, and Corticella, from Wood.

CEROSTOMA, LATREILLE.

These insects are nearly allied to the preceding, especially in the structure of the palpi, but differ from them in the curious habit of sitting with the antennæ porrected forwards, like some of the Phryganeidæ; the fore

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wings are also narrower and rounded behind, with the inner margin with a more or less waved pale streak; the spiral tongue is long and slender. The caterpillars of one of the species form very elegant open-work silk cases, which permit the enclosed chrysalis to be perceived through the meshes.

SPECIES 1.—CEROSTOMA PORRECTELLA[1].—(Linnæus, etc.; Wood, fig. 1546; and our Plate CXVIII., Fig. 1.)—Expands 7 lines; fore wings whitish, or pale buff, with the inner margin rather broadly but irregularly sinuated, white, edged in front with ashy-black, and with some black patches at the extremity of the costa; apical margin with an oblique brown patch; hind wings pale brown. The caterpillar feeds on the buds of the white rocket, in my garden at Hammersmith, and the chrysalis is enclosed within a beautiful open network cocoon. The moth appears in June and August.

[1] SYNONYMES.—*Tinea Hesperidella*, Hübner, etc.
Ypsolophus vittatus, Fabricius.

SPECIES 2.—CEROSTOMA ANNULATELLA—(Curtis, Brit. Ent., pl. 420; Wood, fig. 1547; and our Plate CXVIII., Fig. 2.)—Expands 8½ lines; variable in colour; fore wings more or less varied, and spotted with brown; inner margin pale ochre, but with a row of minute dark dots, its inner margin indented, and the costa dotted and spotted with brown; hind wings ashy. North of England and Scotland, in July and August.

SPECIES 3.—CEROSTOMA MACULIPENNIS.—(Curtis; Wood, fig. 1548; and our Plate CXVIII., Fig. 3.)—Expands 7 lines; "dirty ochre; fore wings freckled with brown, inferior margin dark brown, with three large ochreous spots, one towards the base, another at the centre, and a third near the posterior angle." August, Scotland; and September, in Hampshire.

SPECIES 4.—CEROSTOMA XYLOSTELLA.—(Linnæus, etc.; Wood, fig. 1549; and our Plate CXVIII., Fig. 4.)—Expands 6 to 7½ lines; fore wings much narrower than in the preceding species, pale ashy-brown, with the inner margin occupied by a sinuate white streak, extending to the anal angle, edged in front with a darker shade; hind wings pale brown. Taken throughout the summer, and in October, in gardens and woods.

TINEA, LINNÆUS, ETC.

Like several of the preceding genera, the head is strongly tufted in front, but the tuft is woolly, and the labial palpi are small, but slightly setose, with all the joints distinct; the spiral tongue is very short, being, in fact, shorter than the maxillary palpi, which are fleshy and slender, and apparently five-jointed; the wings are very much deflexed in repose, the fore ones elongate-linear, having an oily appearance. The caterpillars are fleshy, and inhabit cases, which they construct of various woollen and other materials (being for the most part domestic, and very destructive to woollens, furs, feathers, carpets, grain, etc.), in which they reside and undergo their transformations. From their habits they are known by the ordinary name of Clothes Moths.

SPECIES 1.—TINEA TAPETZELLA.—(Linnæus, etc.; Wood, fig. 1550; and our Plate CXVIII., Fig. 5.)—Expands from 5 to 10 lines; fore wings black at the base, extending nearly to the middle, whence they are white, with various, nearly obsolete, small, ashy clouds, and two dots near the tip; hind wings ashy; head white. Common in houses through the summer.

SPECIES 2.—TINEA SEMIFULVELLA.—(Haworth, etc.; Wood, fig. 1551; and our Plate CXVIII., Fig. 6.)—Expands 9½ lines; fore wings shining pale fulvous-grey, or yellowish, with the apical margin broadly dark

fulvous, as well as the fringe, and with a small dark dot near the anal angle; hind wings brown-leaden and shining, In various places round London, in June.

Species 3.—Tinea vestianella[k].—(Linnæus (?); Stephens; Wood, fig. 1552.)—Expands 7 to 10 lines; fore wings greyish-black, glossy, and mottled with small dark clouds, with a small pale patch on the disk before the middle; fringe tawny, with small dusky patches at the base; hind wings leaden-brown and glossy. Common in houses and outbuildings in the summer.

[k] Synonyme.—*Tinea saturatella*, Haworth.

Species 4.—Tinea ustella[l].—(Linnæus; Haworth; Wood, fig. 1553; and our Plate CXVIII., Fig. 7.)—Expands 5½ lines; fore wings black and glossy, with a large yellow spot in the middle, the inner margin also occupied by an indented whitish-yellow streak, and some dots of the same colour at the extremity of the costa; hind wings black, with a purple tinge; head clothed with fulvous hairs. June and July, near London, but not common.

[l] Synonyme.—*Tinea ferruginella*, Hübner.

Species 5.—Tinea flavicostella.—(Plate CXVIII., Fig. 8.)—Expands 6 lines; fore wings blackish-brown, very glossy, the disk with a few elevated paler scales scattered over it; the costa with a very narrow fulvous edging; fringe concolorous; hind wings ashy and glossy; fringe pale brown. Communicated by Mr. Bentley, with the name employed above. Two specimens were taken at Margate, in July.

Species 6.—Tinea fusçipunctella.—(Haworth, etc.; Wood, fig. 1554; and our Plate CXVIII., Fig. 9.)—Expands 6 to 7½ lines; fore wings greyish-ash and very glossy, slightly clouded, and with about four black dots scattered over the disk, the outer one largest; hind wings pale ashy-brown. Found in houses, outhouses, etc., in the summer.

Species 7.—Tinea pellionella.—(Linnæus, etc.; Wood, fig. 1555; and our Plate CXVIII., Fig. 10.)—Expands 5 to 7 lines; fore wings ashy-brown, slightly clouded, or pale brown, glossy, with a black dot on the disk before the middle; hind wings pale ashy-brown. Common in houses, etc., through the spring and summer.

Species 8.—Tinea nigripunctella.—(Haworth, etc.; Wood, fig. 1556; and our Plate CXVIII., Fig. 11.)—Expands 5 to 6 lines; fore wings tawny-yellow, very much dotted with black, the spots almost forming fasciæ; head tawny; hind wings pale ash. In houses, etc., through the spring and summer.

Species 9.—Tinea albipunctella.—(Haworth, etc.; Wood, fig. 1557; and our Plate CXVIII., Fig. 12.)—Expands 5½ lines; fore wings ashy-black, irregularly clouded with numerous, very minute, white spots and streaks; hind wings black, glossy, with deep blackish fringe. Taken in June and July, in houses and gardens near London.

Species 10.—Tinea flavescentella.—(Haworth, etc.; Wood, fig. 1558; and our Plate CXVIII., Fig. 13.)—Expands 7 to 7½ lines; fore wings very pale yellowish, with three almost obsolete brown dots, two placed transversely before, and the third beyond the middle; hind wings yellowish-white; head tawny; palpi entirely pale yellow. Taken in houses, etc., in June, but not common.

Species 11.—Tinea lappella[m].—(Linnæus, etc.; Wood, fig. 1559; and our Plate CXVIII., Fig. 14.)—Expands 5½ to 7½ lines; fore wings yellowish; the base of the costa, and three spots placed as in the preceding

pecies, black; hind wings pale brown; head tawny; palpi black, with the tips tawny. Taken in woods and forests, in June.

[m] SYNONYME.—*Tinea tripunctella*, Fabricius; Donovan, xi., pl. 382, fig. 3.

SPECIES 12.—TINEA SULPHURELLA.—(Stephens; Wood, fig. 1560; and our Plate CXVIII., Fig. 15.)—Expands 5 to 5½ lines; fore wings narrow, slightly falcate, sulphur coloured, with slight brown irrorations; hind wings whitish-ash. Rare, in June.

Obs.—Mr. Bentley informs us that the Tinea sulphurella of Haworth is identical with Gracillaria leucapennella.

SPECIES 13.—TINEA DESTRUCTOR.—(Stephens; Wood, fig. 1561; and our Plate CXVIII., Fig. 16.)—Expands 5 to 7 lines; fore wings entirely pale testaceous yellow; hind ones pale testaceous ash; fringe pale testaceous yellow; forehead tawny. The larva attacks preserved animals, birds, insects, etc. The moth appears through the spring and summer in London.

SPECIES 14.—TINEA CLOACELLA.—(Haworth; Wood, fig. 1562; and our Plate CXVIII., Fig. 17.)—Expands 5 to 7 lines; fore wings brunneous-grey, slightly powdered, with white scales, and two large brown patches on the outer part of the costa, the outer one connected with a short, black, discoidal line; hind wings black. Common in outbuildings, etc., during the summer.

SPECIES 15.—TINEA CORTICELLA.—(Curtis, Brit. Ent., pl. 511; and our Plate CXVIII., Fig. 20.)—Expands 8 lines; fore wings whitish, varied with small ochreous, brown, and dark spots, the costa spotted with dark brown, the spots unequal in size; in the middle of the disk is a triangular ochreous patch, and a subapical, oblique, irregular mark; inner margin with two remote dark dots. Taken on trunks of trees in Kensington Gardens. It has been considered as a variety of the preceding.

SPECIES 16.—TINEA GRANELLA.—(Linnæus, etc.; Wood, fig. 1563; and our Plate CXVIII., Fig. 18.)—Expands 5 to 7½ lines; fore wings livid, or hoary, and more or less varied with blackish and white dissimilar-shaped marks, approximating together; hind wings leaden-black; forehead white. The caterpillar attacks housed grain, and is occasionally productive of immense mischief in granaries.

SPECIES 17.—TINEA PARASITELLA.—(Hübner, etc.; Wood, fig. 1564; and our Plate CXVIII., Fig. 19.)——Expands 7½ to 9 lines; fore wings ashy or rusty-brown, with whitish atoms, and with the disk more or less tessellated with pitchy dots, especially beyond the middle, the costa with some subapical, broad, whitish streaks; hind wings brown. Found in June and July, near London and elsewhere, but not common.

EUPLOCAMUS, LATREILLE. SCARDIA, TREITSCHKE.

The antennæ of the males are furnished with a double row of fascicles of hairs, appearing pectinated, the labial palpi are much longer than the head, bent upwards, with the terminal joint slender and exposed; the spiral tongue is very short; the fore wings very much deflexed in repose, long, sublanceolate, with the apical margin rounded. The caterpillars are fleshy and slightly setose. They are sixteen-footed, and feed upon Boleti. E. anthracinellus and tessellus appear to havn been introduced into our lists without sufficient authority.

SPECIES 1.—EUPLOCAMUS MEDIELLUS.—(Hübner; Curtis, Brit. Ent., pl. 591; Wood, fig. 1565; and our Plate CXVIII., Fig. 22.)—Expands 12 to 15 lines; fore wings very glossy, ochreous, dotted with white and

black, with two large dark patches on the costa, and a third, still larger, on the inner margin, forming together a triangle, the latter is more oblique, and extends considerably into the disk, and is streaked with black; hind wings brown, with a purple tinge. Wanstead Flats, New Forest, Birch Wood, etc., but very rare; in July, the females resting on the aspen-trunks, round which the males fly at dusk.

[n] Synonyme.—*Noctua Boleti*, Fabricius.

ACROLEPIA, Curtis.

These insects have considerably the habit of some of the narrower-winged Tortricidæ, but Mr. Curtis considers them nearest to the restricted genus Tinea, from which they are distinguished by the smooth scaly head; the labial palpi are slender and recurved in front of the face, the spiral tongue long, the maxillary palpi distinct; the fore wings much deflexed in repose, elongate sublinear, with the apical margin rounded.

Species 1.—Acrolepia betuletella.—(Curtis, Brit. Ent., pl. 679.)—Expands 6½ lines; fore wings ochre-brown, slightly clouded and sparingly freckled with black and white dots; costa with a few indistinct pale dots, inner margin with a large cream-coloured spot in the middle, edged with black, and bearing a dark line, and with several minute cream-coloured dots, edged with black. Taken on birch-trees in Castle Eden Dene, Cumberland, at the beginning of August.

Species 2.—Acrolepia autumnitella.—(Curtis.)—Fore wings mottled with brown, a large semi-ovate blackish spot at the middle of the costa, an elongated one towards the posterior margin, and numerous black dots and white scales on the disk, a trigonate cream-coloured spot in the middle of the inner margin, and one or two lines of the same towards the base; hind wings brown, palest at the base. Taken at Glanvilles, Wootton, Dorsetshire, in the autumn.

DESCRIPTION OF PLATE CXIX.

Insects.—Fig. 1. Lepidocera Birdella (Mr. Bird's).
„ Fig. 2. Lepidocera mediopectinella (the middle feathered).
„ Fig. 3. Lepidocera taurella (the little bull).
„ Fig. 4. Lepidocera chenopodiella (the spotted bull).
„ Fig. 5. Incurvaria masculella (the feathered diamond-back).
„ Fig. 6. Incurvaria pectinella (the feathered twin spot).
„ Fig. 7. Incurvaria Oehlmanniella (Oehlmann's).
„ Fig. 8. Incurvaria spuria (the spurious treble-spot).
„ Fig. 9. Incurvaria tripunctella (the trebled-spotted).
„ Fig. 10. Incurvaria rufimitrella.
„ Fig. 11. Amaurosetia oppositella (the two-spotted brown).
Insects.—Fig. 12. Amaurosetia quadripunctella (the double-spotted brown).
„ Fig. 13. Amaurosetia minutella (the double gold spotted).
„ Fig. 14. Amaurosetia cerusella (the triple-spotted white).
„ Fig. 15. Amaurosetia Albinella (Albin's).
„ Fig. 16. Amaurosetia Megerlella (Megerle's).
„ Fig. 17. Amaurosetia albifrontella (the white fronted).
Plant.—Fig. 18. Fumaria officinalis (common fumitory).

The whole of the insects in this plate are from the cabinet of Mr. Bentley, with the exception of Nos. 4, 6, 8, 16, and 17.

LEPIDOCERA, Stephens.

The very densely squamose palpi and male antennæ (except the tips of the latter) at once distinguish this genus; the spiral tongue is very short, the head tufted in front, the fore wings very squamose, nearly linear and truncated at the extremity, and the body is rather long and depressed. The species are small.

Species 1.—Lepidocera Birdella.—(Curtis, Brit. Ent., pl. 344; Wood, fig. 1566; and our Plate CXIX., Fig. 1.)—Expands 4½ to 6½ lines; fore wings dull reddish-ochre, with three fasciæ, formed of minute black atoms, the middle one broadest; hind wings coppery-brown, paler at the base. Liverpool, Hertford, and South Lambeth, but very rare; July.

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SPECIES 2.—LEPIDOCERA MEDIOPECTINELLA.—(Haworth; Wood, fig. 1567; and our Plate CXIX., Fig. 2.)—Expands 5 to 5½ lines; fore wings dull yellowish, obscurely clouded with brown; hind wings pale brown; antennæ black, strongly pectinated in the middle. Taken in the Middlesex marshes to the east of London, in June.

SPECIES 3.—LEPIDOCERA TAURELLA.—(Hübner, etc.; Wood, fig. 1568; and our Plate CXIX., Fig. 3.)—Expands 4½ to 5½ lines; fore wings rather narrow, ashy-brown, and almost destitute of shade, except along the apical margin, which is paler; hind wings brownish in the male, white in the female, with a black border; abdomen with a pale ochre subapical fascia; antennæ slightly thickened, with scales on the middle. Rare; marshy places, about the beginning of July.

SPECIES 4.—LEPIDOCERA CHENOPODIELLA.—(Hübner; Wood, fig. 1569; and our Plate CXIX., Fig. 4.)—Expands 5½ to 6 lines; fore wings ashy-brown, with darker atoms, and obscure, irregular, confluent, yellowish spots on the disk, placed longitudinally; hind wings whitish, with the apical margin brown. Taken at Hertford and Barham, but extremely rare.

INCURVARIA, HAWORTH.

These insects have the head densely tufted in front and on the crown; the antennæ of the males are either strongly pectinated or stout and sub-filiform, and those of the female simple; the labial palpi are rather small and drooping; the third joint short and very slender, and the maxillary palpi are as long as the labial, and incurved; the fore wings are very much deflexed in repose, and somewhat lanceolate, of metallic brown colours, and generally with pale spots.

SPECIES 1.—INCURVARIA MASCULELLA.—(Wien. Verz., etc.; Curtis, Brit. Ent., pl. 607; Wood, fig. 1570; and our Plate CXIX., Fig. 5.)—Expands 5 to 7 lines; fore wings purplish-brown, speckled with orange and ferruginous scales, a roundish spot in the middle, and a triangular one (sometimes obsolete) near the extremity of the inner margin; male antennæ thickly pectinated. Taken flying about whitethorn hedges, in May.

SPECIES 2.—INCURVARIA PECTINELLA°.—(Fabricius, etc.; Wood, fig. 1571; and our Plate CXIX., Fig. 6.)—Expands 6 lines; fore wings tawny-brown, with a whitish obscurely-geminated spot before the middle of the inner margin; and another, smaller and more indistinct, towards the anal angle; hind wings brown; male antennæ coarsely pectinated. Also taken about the end of May, in hedges.

° SYNONYME.—*Phalæna Tinea trigonella*, Linnæus (?).

SPECIES 3.—INCURVARIA OEHLMANNELLA.—(Hübner; Wood, fig. 1572; and our Plate CXIX., Fig. 7.)—Expands 6 to 7 lines; fore wings purplish-black, inner margin with two remote pale (whitish or yellowish) spots, and a third near the extremity of the costa; hind wings shining black; head tawny; male antennæ stout, slightly moniliform. Taken in chalky places round London, about the beginning of June.

SPECIES 4.—INCURVARIA SPURIA.—(Haworth; Wood, fig. 1573; and our Plate CXIX., Fig. 8.)—Expands 6 to 7 lines; fore wings narrow, brown, with a slight purple tinge, with two white spots on the inner margin, and a third, more minute, on the costa, further removed from the tip than in the preceding species; hind wings dusky; head tawny; male antennæ thickened. Near London, towards the end of May, but rare.

Species 5.—Incurvaria (?) tripuncta.—(Haworth; Wood, fig. 1574; and our Plate CXIX., Fig. 9.)—Expands 6 to 6½ lines; fore wings dark brown; costa with two white spots, and another on the inner margin, near the anal angle, forming a triangle with the others, the apical margin sometimes slightly spotted with yellow. The labial palpi in this species are slender and recurved, and the head is clothed with depressed scales. Taken round London, about the beginning of June.

Species 6.—Incurvaria rufimitrella.—(Hübner, and our Plate CXIX., Fig. 10.)—Expands 6 lines; wings entirely dark brown, with a slight golden gloss; head clothed above with tawny hairs; labial palpi very short, and not recurved. Described from the cabinet of Mr. Bentley.

AMAUROSETIA, Stephens.

The maxillary palpi are distinct, but very minute; the labial rather long, slender, diverging, straight, and depending, with the terminal joint slender, and subacute; the head is clothed above with decumbent scales; the antennæ simple in both sexes; the fore wings are incumbent in repose, elongate, narrow, with short fringe, and plainly coloured, usually with some pale markings.

Species 1.—Amaurosetia oppositella.—(Fabricius, etc.; Wood, fig. 1575; and our Plate CXIX., Fig. 11.)—Expands 5 to 6½ lines; fore wings obscure brown, with two equal-sized yellow spots, one on the costa, and the other opposite to it, on the inner margin; hind wings and front of body brown. Common in gardens, in June.

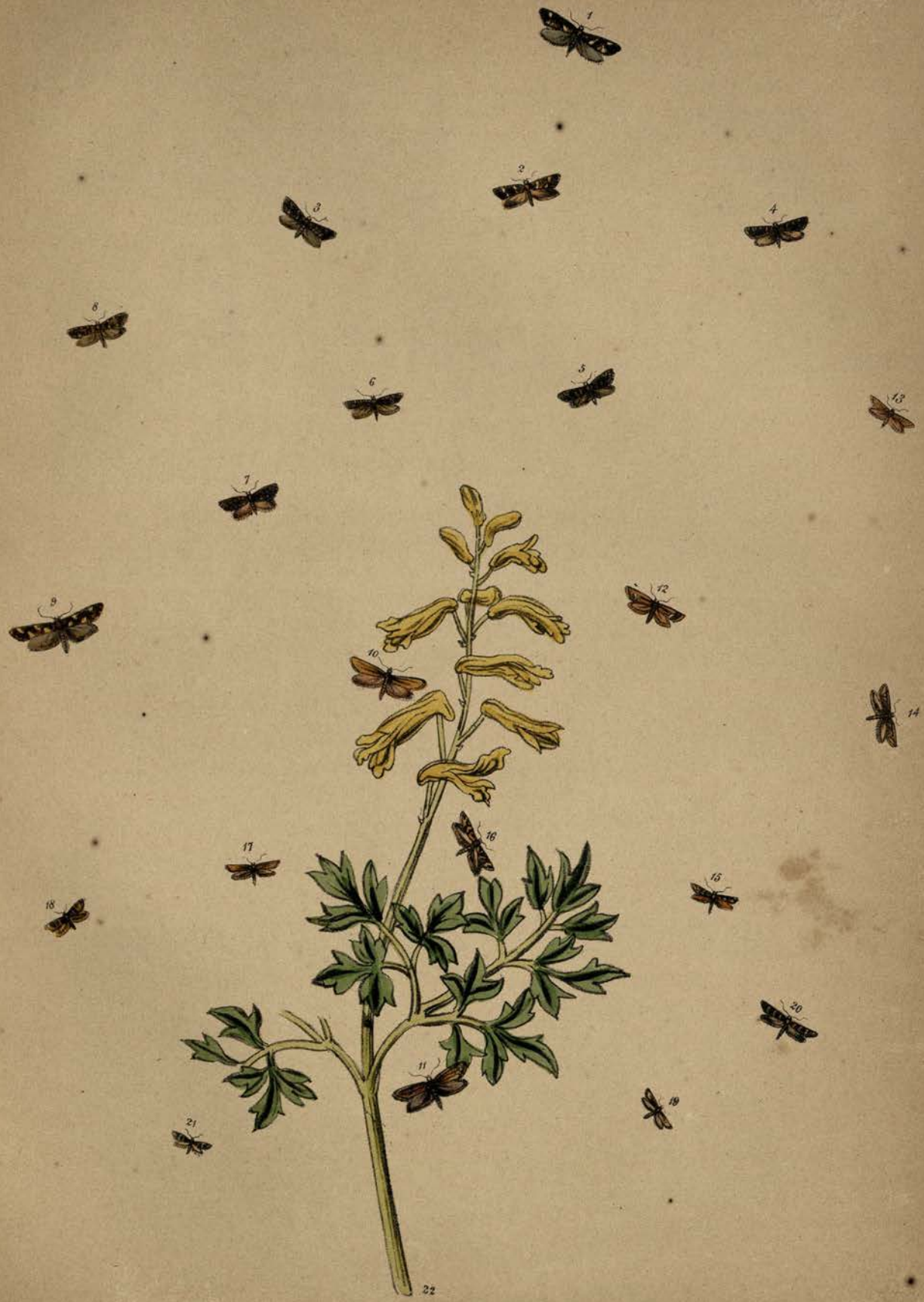
Species 2.—Amaurosetia 4-punctella.—(Fabricius, etc.; Wood, fig. 1576; and our Plate CXIX., Fig. 12.)—Expands 6 lines; fore wings brown, sometimes paler brown, with two approximating white spots in the middle, one towards the inner margin larger and transverse; these spots are sometimes nearly obsolete. Gardens and woods, in June.

Species 3.—Amaurosetia minutella.—(Linnæus, etc.; Wood, fig. 1577; and our Plate CXIX., Fig. 13.)—Expands 4½ to 5 lines; fore wings brown, with two yellow spots, one in the middle of the inner margin, and the other on the disk beyond the middle, seldom extending quite to the costa; head yellowish. Near London and Norfolk, in June.

Species 4.—Amaurosetia atrella.—(Hübner, etc.; Wood, fig. 1578.)—Expands 5 lines; all the wings narrow and black; the fore ones with two yellow spots (sometimes almost obsolete) on the opposite margins, one placed rather beyond the middle of the costa, and the other nearly in the middle of the inner margin; head brown; hind legs black, with whitish articulations. Near Darenth Wood, in June.

Species 5.—Amaurosetia Knockella.—(Fabricius (?); Haworth.)—Expands 4 lines; fore wings golden-brownish, with a whitish spot, or yellowish-white towards the extremity of the costa, and a broad whitish streak on the inner margin. A single specimen taken in the spring, at Coombe Wood, by Mr. Haworth.

Species 6.—Amaurosetia cerusella.—(Hübner, etc.; Wood, fig. 1579; and our Plate CXIX., Fig. 14.)—Expands 4½ lines; fore wings white at the base, ashy-white or hoary beyond the middle, with three indistinct brown spots arranged in a triangle, two on the opposite margins, the inner one much darker, and the third in the middle of the apical margin; hind wings leaden-brown, with brownish fringe. Fine specimens have a brown line from the base to the middle, and a black dot near the middle of the inner margin. Taken in grassy places, in June.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SPECIES 7.—AMAUROSETIA ALBINELLA.—(Linnæus, etc.; Wood, fig. 1580; and our Plate CXIX., Fig. 15.)—Expands 4½ to 5 lines; fore wings brown, with an oblique golden-yellow streak, the ends extending towards the apical margin; hind wings dull brown. June, in woods, etc.

SPECIES 8.—AMAUROSETIA MEGERLELLA.—(Hübner, etc.; Wood, fig. 1581; and our Plate CXIX., Fig. 16.)—Expands 3¼ to 4 lines; fore wings pale brown, with a curved, broadish, whitish or ochreous streak before the middle, incurved at each end: hind wings narrow, and pale brown. Middle of June, in woods.

SPECIES 9.—AMAUROSETIA ALBIFRONTELLA,—(Hübner; Stephens; Wood, fig. 1582; and our Plate CXIX., Fig. 17.)—Expands 4 lines; fore wings brown, with a slightly-incurved pale streak near the base, and two rather triangular pale spots on the opposite margins beyond the middle; forehead pale. Near London, in June.

DESCRIPTION OF PLATE CXX.

INSECTS.—Fig. 1. Lampronia capitella (the triple-spotted black).
„ Fig. 2. Lampronia prælatella (the spotted violet).
„ Fig. 3. Lampronia flavipunctella (the 4-spotted brown).
„ Fig. 4. Lampronia formosella.
„ Fig. 5. Lampronia margine-punctella (the dotted border).
„ Fig. 6. Lampronia Melanella (the white-spotted black).
„ Fig. 7. Lampronia atrella (the dingy black speckled).
„ Fig. 8. Lampronia corticella (the golden-speckled black).
„ Fig. 9. Lampronia rupella (the 4-spotted black).
„ Fig. 10. Eriocephala subpurpurella (the purple underwing).
„ Fig. 11. Eriocephala semi-purpurella (the half-purplish underwing).
„ Fig. 12. Eriocephala purpurella (the purple upper wing).
INSECTS.—Fig. 13. Eriocephala auropurpurella (the gold-brindled purple).
„ Fig. 14. Eriocephala rubroaurella (the red gold).
„ Fig. 15. Eriocephala Helwigella (the red-barred gold).
„ Fig. 16. Eriocephala sanguinella (the scarlet-barred gold).
„ Fig. 17. Eriocephala calthella (the small gold).
„ Fig. 18. Eriocephala concinnella (the neat).
„ Fig. 19. Eriocephala Seppella (Sepp's).
„ Fig. 20. Eriocephala ammanella (the single-spotted gold).
„ Fig. 21. Eriocephala bistrigella (the silver-striped gold).
PLANT. — Fig. 22. Corydalis lutea (the yellow fumitory).

The insects in this plate are from the cabinet of Mr. Bentley, with the exception of Nos. 7, 12, 14, 16, 18, and 21, from Wood.

LAMPRONIA, STEPHENS.

These pretty moths have the fore wings adorned with metallic colours and yellow patches; they are rather elongate, with the tips rounded, and are deflexed in repose; the head has a tuft of hairy scales; the antennæ in the males slightly pubescent; the maxillary palpi rather long and incurved; the labial short, slender, slightly deflexed, and setose, and the body is short and slender. As indicated by their metallic appearance, the species are diurnal in their flight.

SPECIES 1.—LAMPRONIA CAPITELLA.—(Linnæus, etc.; Wood, fig. 1583; and our Plate CXX., Fig. 1.)—Expands 6½ to 8 lines; fore wings purplish-brown, with an oblique, golden-yellow, fascia-like spot towards the base, sometimes extending to the costa, and two other spots on the opposite margin, the inner one near the anal angle, the costal one largest; hind wings brown; head luteous. Taken in gardens and orchards, about the beginning of June, the caterpillar feeding in the interior of young shoots of currant-trees, which it sometimes totally destroys. (H. Doubleday, in Entom., p. 143.)

SPECIES 2.—LAMPRONIA PRÆLATELLA.—(Fabricius, etc.; Wood, fig. 1584; and our Plate CXX., Fig. 2.)—Expands 5½ to 6½ lines; fore wings violet or violet-brown, with a straight, silvery, transverse streak before the middle of the wing, and two marginal opposite spots beyond the middle, with a minute intermediate white dot on the costa, which is sometimes wanting. Hedges and woods, at the beginning of June.

SPECIES 3.—LAMPRONIA LUZELLA.—(Hübner; Curtis, Brit. Ent., pl. 639; Wood, fig. 1585.)—Expands 6 to 7 lines; fore wings purple-brown, with two golden spots before, and two a little beyond the middle of the

wing obliquely opposed on the costa and inner margins, the former the smallest and more attenuated, the others more triangular; hind wings orange-brown; head dull tawny. Near London and in the New Forest.

SPECIES 4.—LAMPRONIA FLAVIPUNCTELLA.—(Haworth; Wood, fig. 1586; and our Plate CXX., Fig. 3.)—Expands 5 or 6 lines. This differs only from the preceding, of which it is probably a variety, in having the two basal spots of the fore wings almost confluent into an oblique fascia. Taken in woods round London, about the beginning of June.

SPECIES 5.—LAMPRONIA (?) FORMOSELLA.—(Haworth, in Ent. Trans., O. S., i., 337; and our Plate CXX., Fig. 4.)—Expands 5 lines; fore wings brown and glossy, with an entire, transverse, pale buff streak before the middle, followed by two small patches of the same colour on the costa, the outer one large and triangular, enclosing a dark dot; the disk of the wing beyond the middle bearing several large tawny-gold patches, the outer one curved and dilated towards the tip, the pale markings more or less edged with black; inner margin slightly luteous near the anal angle; hind wings blackish. Taken at Greenhithe, in May. Described from Mr. Bentley's cabinet.

SPECIES 6.—LAMPRONIA MARGINE-PUNCTELLA.—(Stephens; Wood, fig. 1588; and our Plate CXX. Fig. 5.)—Expands 5½ to 6 lines; fore wings brown, slightly metallic, with a row of golden dots, of dissimilar size, on the costa and apical margin more or less distinct; at the base of the inner margin is a large yellow spot, divided by a fuscous line; fringe dusky, varied with gold; hind wings and fringe dusky; head pale brown. Ripley, in June, but very rare.

SPECIES 7.—LAMPRONIA RUPELLA.—(Fabricius, etc.; Wood, fig. 1587; and our Plate CXX., Fig. 9.)—Expands 6½ to 9 lines; fore wings blackish, with four more or less distinct white spots, two on the costa and two on the inner margin, the pairs obliquely opposed together; the costa has also often a minute basal white dot; hind wings pale brown; head with a red tuft. Near London and in the New Forest, on the trunks of trees, the empty pupa-cases protruding from the stems.

SPECIES 8.—LAMPRONIA MELANELLA.—(Haworth, etc.; Wood, fig. 1589; and our Plate CXX., Fig. 6.)—Expands 4 to 5 lines; fore wings black, with two opposed marginal white spots before, and two others a little beyond the middle, the apical margin with three or four very minute white dots; fringe dark ashy, with minute white dots; hind wings black. Taken near London and Ripley, in June, amongst elms.

SPECIES 9.—LAMPRONIA ATRELLA.—(Stephens; Wood, fig. 1590; and our Plate CXX., Fig. 7.)—Expands 4 to 5 lines; fore wings deep black, with a very obscure whitish fascia before the middle, and some minute dots of a similar hue on the costa and inner margins; hind wings brown, immaculate. Near London, in June.

SPECIES 10.—LAMPRONIA CORTICELLA.—Linnæus (?), etc.; Wood, fig. 1591; and our Plate CXX., Fig. 8.)—Expands 5 to 5½ lines; fore wings black, with about three golden equidistant spots towards the middle of the costa, and two others, nearly opposite, on the inner margin, the disk with numerous minute dots of gold; hind wings black; forehead ferruginous. Taken in gardens, about the beginning of June.

ERIOCEPHALA, CURTIS. LAMPRONIA, PARS STEPHENS.

Like the preceding group, these insects have the fore wings adorned with a metallic gloss, but they are ovate-lanceolate in form, and the veins are arranged in a very peculiar manner, those ordinarily adjacent to the costa

being pushed back to the middle of the disk, so that the wings are traversed by veins, the branches of which reach the margins, at equal distances apart; the wings are scaly, and deflexed in repose; the head is woolly; the antennæ short and filiform, the labial palpi very small, whilst the maxillary are long and porrected, the maxillæ or spiral tongue being almost obsolete; the abdomen of the males is furnished with two long, curved, horny appendages at the tips. In several of these respects this genus makes a near approach to the Trichoptera.

Species 1.—Eriocephala subpurpurella.—(Haworth, etc.; Wood, fig. 1592; and our Plate CXX., Fig. 10.)—Expands 3½ to 6 lines; fore wings golden; hind wings purple-brown, especially towards the apex, or brown without any purple gloss; the head in one sex is very hairy. Taken in woods, where broom occurs, in June.

Species 2.—Eriocephala semipurpurella.—(Stephens; Wood, fig. 1593; and our Plate CXX., Fig. 11.)—Expands 6 to 7 lines; fore wings long and narrow, anteriorly of a shining immaculate purple; hind wings very transparent and brown. Darenth Wood, and elsewhere, in June.

Species 3.—Eriocephala purpurella[p].—(Haworth, etc.; Wood, fig. 1594; and our Plate CXX., Fig. 12.)—Expands 4½ to 5 lines; fore wings bright purple, sprinkled beyond the middle with minute white dots, and with a fascia-like spot near the anal angle on the inner margin of the wing; hind wings brown, the extremity with golden-purplish gloss. Near London, in the summer, and also in February, according to Mr. Haworth.

[p] Synonyme.—*Tinea Goldegella*, Hübner (?).

Species 4.—Eriocephala auropurpurella[q].—(Haworth, etc.; Wood, fig. 1595; and our Plate CXX., Fig. 13.)—Expands 5 to 5½ lines; fore wings brilliant reddish-purple, with various golden spots and dots scattered over the wings, and which are occasionally more or less confluent; hind wings brown, the apex slightly purplish-golden. Taken upon flowers, in June, but very rare.

[q] Synonyme.—*Tinea Sparmannella*, Fabricius (?).

Species 5.—Eriocephala rubro-aurella[r].—(Haworth, etc.; Wood, fig. 1596; and our Plate CXX., Fig. 14.)—Expands 5 lines; fore wings red-gold, or rich purplish-gold, with a spot towards the apical margin, in which is a minute brown dot; the middle of the inner margin with another small golden spot; hind wings glossed with purple and gold. Taken in woods, in the summer, but rare.

[r] Synonyme.—*Tinea fibulella*, Fabricius (?).

Species 6.—Eriocephala rubrifasciella[s].—(Haworth, etc.; and our Plate CXX., Fig. 15.)—Expands 4 to 4½ lines; fore wings dark metallic golden coloured, with four equidistant red-purple fasciæ, the first basal, the second slightly curved before, the third beyond the middle, and bifid at the costa, the fourth on the apical margin, united to the third near the anal angle; fringe brown; hind wings coppery-brown, especially beyond the middle. On trunks of birch trees, whitethorn hedges, flowers, etc., in May.

[s] Synonyme.—*Tinea Helwigella*, Hübner (?) ? Stephens; Wood, fig. 1597.

Species 7.—Eriocephala sanguinella.—(Haworth, etc.; Wood, fig. 1598; and our Plate CXX., Fig. 16.)—Expands 4 lines; fore wings rich yellow or golden coloured, but not metallic, with four fasciæ, the first and second as in the preceding species, but nearly blood-red, the third bifid on the inner margin and not on the costa, and the fourth apical and not united to the third; fringe golden; hind wings brown. Supposed to have been taken in Kent.

SPECIES 8.—ERIOCEPHALA CALTHELLA[t].—(Linnæus, etc.; Curtis, Brit. Ent., pl. 751; Wood, fig. 1599; and our Plate CXX., Fig. 17.)—Expands 3 to 3¾ lines; fore wings burnished gold, mottled with orange-brown, the base crimson or purple; hind wings brown, with a golden-violet tinge; fringe brown; tuft of head rusty-ochre. The caterpillar feeds on the marsh marigold, the flowers of which are frequented by the moths during May and June.

SYNONYME.—*Tinea pusillella*, Hübner.

SPECIES 9.—ERIOCEPHALA CONCINNELLA.—(Stephens; Wood, fig. 1600; and our Plate CXX., Fig. 18.)—Expands 2¾ to 3½ lines; fore wings metallic golden, with a straight, slender, silvery-white streak in the middle, and sometimes a faint dot of the same towards the apical margin; hind wings brown. Taken in the Kentish woods, in June.

SPECIES 10.—ERIOCEPHALA SEPPELLA[u].—(Fabricius, etc.; Wood, fig. 1601; and our Plate CXX., Fig. 19.)—Expands 3 to 3½ lines; fore wings golden glossy, with two straight, transverse, silvery streaks; hind wings shining golden. Taken in woods round London, in June.

[u] SYNONYME.—*Tinea aurella*, Hübner.

SPECIES 11.—ERIOCEPHALA AMMANELLA.—(Hübner, etc.; Stephens, Ill., pl, 41, fig. 2; Wood, fig. 1602; and our Plate CXX., Fig. 20.)—Expands 4 to 5 lines; fore wings rich purple, with the tuft on the head, a slender, nearly straight, transverse streak towards the base of the wings, a rather broad slightly-curved one in the middle, and a subapical oval spot, all of gold; hind wings dull brown. Woods and forests, in May.

SPECIES 12.—ERIOCEPHALA BISTRIGELLA.—(Haworth, etc.; Wood, fig. 1603; and our Plate CXX., Fig. 21.)—Expands 3 lines; fore wings dull golden, with two silvery, slightly-curved, narrow fasciæ, the second of which is beyond the middle of the wing; hind wings brown, or leaden-brown, not tinged with golden. Darenth Wood and Parley, Dorsetshire, in June, but very rare.

DESCRIPTION OF PLATE CXXI.

INSECTS.—Fig. 1. Euspilapteryx auroguttella (the gold dotted).
„ Fig. 2. Gracillaria nebulea (the nebulous slender).
„ Fig. 3. Gracillaria meleagripennella (the turkey's feather).
„ Fig. 4. Gracillaria syringella (the confluent barred).
„ Fig. 5. Gracillaria cinerea (the double-barred slender).
„ Fig. 6. Gracillaria V-flava (the yellow V).
„ Fig. 7. Gracillaria versicolor (the changeable).
INSECTS.—Fig. 8. Gracillaria substriga (the obscure streaked).
„ Fig. 9. Gracillaria semifascia (the semi-white bar).
„ Fig. 10. Gracillaria purpurea (the triangle-marked purple).
PLANT.—Fig. 11. Verbascum pulverulentum (the powdered mullein).

The insects in this plate are figured from specimens in the cabinet of Mr. Bentley, with the exception of Nos. 1, 2, and 7, from Wood.

EUSPILAPTERYX, STEPHENS.

The fore wings are elongate-linear, with shortish cilia at the anal angle, with a metallic disk, spotted with yellow; the hind wings lanceolate, with long fringe; the maxillary palpi slender, curved, and deflexed; the labial ones very short, slender, and incurved, with the tip very acute; the antennæ and legs long and slender.

SPECIES 1.—EUSPILAPTERYX AUROGUTTELLA.—(Stephens; Wood, fig. 1604; and our Plate CXXI., Fig. 1.)—Expands 4¾ lines; fore wings glossy metallic gold, with a short, pale yellow streak at the base; two spots on the costa, and one on the inner margin, forming a triangle. Taken by Mr. Stephens, in June, at Ripley.

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GRACILLARIA, Haworth. ORNIX, Treitschke.

These curious insects are distinguished by their densely-squamose middle tibiæ, which, when the insect is at rest, with the tarsi, are placed almost in an upright direction, and almost at right angles with the body, so that the insect's head is greatly elevated, whilst the extremity of its wings rests upon the surface on which it is placed; the antennæ are long and slender; the maxillary palpi are short and straight, the labial ones rather long, slender, and recurved; the fore wings long, and the hind ones linear, with very long fringe. The caterpillars are fourteen-footed, having three pairs of abdominal feet.

Species 1.—Gracillaria nebulea.—(Haworth, etc.; Wood, fig. 1605; and our Plate CXXI., Fig. 2.)—Expands 4 to 5 lines; fore wings whitish-brown, or ashy, with large black nebulæ, the costa fasciated with black, interrupted by whitish strigæ. Taken in hedges, in the spring.

Species 2.—Gracillaria meleagripennella.—(Hübner, etc.; Wood, fig. 1606; and our Plate CXXI., Fig. 3.)—Expands 3½ to 5 lines; fore wings blackish, with white nebulæ, the costa streaked with black and white at the tip, and the extremity of the wings with a somewhat ocellated black spot. Darenth Wood, June.

Species 3.—Gracillaria syringella[v].—(Fabricius; Stephens; Wood, fig. 1607; and our Plate CXXI., Fig. 4.)—Expands 4½ to 6 lines; fore wings ochreous-tawny, freckled with brown, with about five more or less interrupted and anastomosing fasciæ, the apical one forming an ocellus, with a black pupil; hind wings ashy-brown. The caterpillar, when young, feeds within the leaves of the common lilac, devouring the parenchyma, and causing the leaves to blister; it afterwards, however, rolls the leaf up, feeding within the roll. The perfect insect is common in gardens in May and July, being double-brooded. See Mr. E. W. Lewis's observations on this species, in Loudon's "Magazine of Natural History," vol. vi.

[v] Synonyme.—*Tinea anastomosis*, Haworth; Curtis, pl. 479.

Species 4.—Gracillaria cinerea.—(Haworth, etc.; Wood, fig. 1608; and our Plate CXXI., Fig. 5.)—Expands 5½ to 6 lines; fore wings ashy or grey, with two or three narrow, oblique, equidistant fasciæ; the outer one a little beyond the middle, more obscure, and rather interrupted, leaving a round brown spot near the inner margin; hind wings brown, or pitchy-brown. Coombe Wood, etc., in hedges.

Species 5.—Gracillaria V-flava.—(Haworth; Wood, fig. 1609; and our Plate CXXI., Fig. 6.)—Expands 4 to 5 lines; fore wings very narrow, brown or tawny; the middle of the wing marked with an angulated yellow mark, like a prostrate V (when the wings are expanded), and an incurved fascia, near the extremity; hind wings tawny-brown; head luteous. Taken by Mr. Stephens, in June, at Ripley.

Species 6.—Gracillaria versicolor[w].—(Haworth; Wood, fig. 1610; and our Plate CXXI., Fig. 7.)—Expands 4 to 4½ lines; fore wings linear, varied with irregular fasciæ, which change, in certain positions, from tawny-gold and coppery to green; hind wings greenish. Taken near London and Ripley, in June.

[w] Synonyme.—*Tinea ustulatella*, Fabricius (?).

Species 7.—Gracillaria substriga.—(Haworth, etc.; Wood, fig. 1611; and our Plate CXXI., Fig. 8.)—Expands 4½ to 5 lines: fore wings brownish-red, with about four more or less obsolete, equidistant, subangulated, whitish strigæ, inwardly edged with black; hind wings leaden-brown, and shining. Near London, Coombe Wood, etc., in June.

SPECIES 8.—GRACILLARIA SEMIFASCIA.—(Haworth; Wood, fig. 1612; and our Plate CXXI., Fig. 9.)—Expands 5½ to 6 lines; fore wings purplish-ashy, with a slender, white, oblique, more or less distinct, semifascia-like streak towards the base of the costa, which is also marked with some whitish and brownish dots beyond the middle; hind wings dark brown. Near London.

SPECIES 9.—GRACILLARIA PURPUREA.—(Haworth; Wood, fig. 1613; and our Plate CXXI., Fig. 10.)—Expands 7 lines; fore wings purple glossy, with a trigonate semifascia in the middle of the costa; emarginate behind, and of an ashy-white colour; hind wings deep brown; the fore wings sometimes occur with an extra short subapical fascia. Near London.

DESCRIPTION OF PLATE CXXII.

INSECTS.—Fig. 1. Gracillaria stigmatella (the triangle-marked red).
„ Fig. 2. Gracillaria ochracea (the triangle-marked ochre).
„ Fig. 3. Gracillaria Thunbergella (Thunberg's).
„ Fig. 4. Gracillaria hemidactylella (the mottled red).
„ Fig. 5. Gracillaria rufipennella (the dull red).
„ Fig. 6. Gracillaria elongella (the plain red).
„ Fig. 7. Gracillaria violacea (the slender violaceous).
„ Fig. 8. Gracillaria roscipennella (the livid slender).
INSECTS.—Fig. 9. Gracillaria leucapennella (the pale slender).
„ Fig. 10. Gracillaria sulphurella (the sulphur).
„ Fig. 11. Gracillaria præangusta (the poplar slender).
PLANT.—Fig. 12. Geranium Robertianum (Herb-Robert).

The insects in this plate are from the cabinet of Mr. Bentley, except 10 and 11, from Wood's Ind. Ent.

SPECIES 10.—GRACILLARIA STIGMATELLA[x].—(Fabricius, etc.; Wood, fig. 1614; and our Plate CXXII., Fig. 1.)—Expands 5½ to 6½ lines; fore wings red, or ashy-red, with a large, trigonate, white, yellowish-white, or ashy-white semifascia in the middle of the costa; emarginate on the disk of the wing; there is also occasionally an ochreous-ashy streak on the inner margin, interrupted with red. Taken in the spring and autumn, round London.

[x] SYNONYME.—*Tinea triangulella*, Panzer. *Gracillaria trigona*, Haworth. *Tinea upupæpennella*, Hübner.

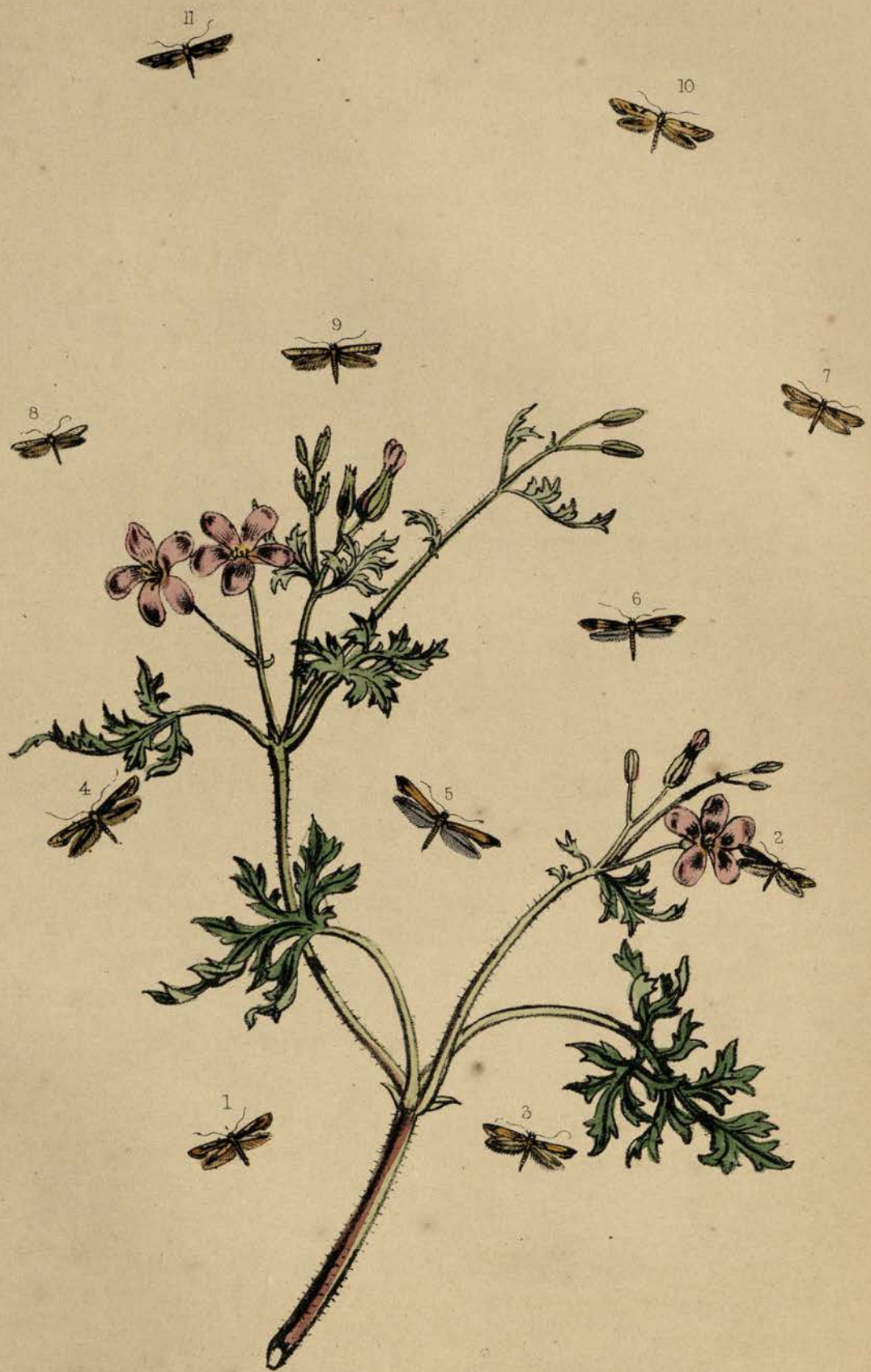
SPECIES 11.—GRACILLARIA OCHRACEA.—(Haworth; Wood, fig. 1615; and our Plate CXXII., Fig. 2.)—Expands 6 to 6½ lines; fore wings ochreous, or ochroleucous; the base slightly reddish; the middle of the costa with a trigonate whitish semifascia, excised within; hind wings pale brown. Taken in company with the preceding.

SPECIES 12.—GRACILLARIA THUNBERGELLA.—(Fabricius, etc.; Wood, fig. 1616; and our Plate CXXII., Fig. 3.)—Expands 5½ to 6½ lines; fore wings golden-sulphur coloured, glossy, with a purple patch near the base, and a large purple apical blotch; sometimes deep violet-red, with a small, central, yellow, trigonate, costal spot; hind wings golden-brown. Taken in oak woods, gardens, etc., in the autumn.

SPECIES 13.—GRACILLARIA HEMIDACTYLELLA[y].—(Wien. Verz., etc.; Wood, fig. 1617; and our Plate CXXII., Fig. 4.)—Expands 8 to 8½ lines; fore wings elongate, obtuse at the tip, red, with a large oblique fascia, a dot in the middle, numerous small dots on the costa and the apex, all of chestnut-red; hind wings leaden-brown. Woods and hedges, in August.

[y] SYNONYME.—*Phalæna Tinea punctella*, Linnæus.

SPECIES 14.—GRACILLARIA RUFIPENNELLA.—(Hübner; Wood, fig. 1618; and our Plate CXXII., Fig. 5.)—Expands 6 to 6½ lines; fore wings pale red, irrorated with black and chestnut; hind wings pale, livid ashy; thighs black; tarsi white. Hedges and woods.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SPECIES 15.—GRACILLARIA ELONGELLA[z].—(Linnæus (?); Stephens; Wood, fig. 1619; and our Plate CXXII., Fig. 6.)—Expands 6 to 7½ lines; very similar to the preceding; fore wings red, sometimes irrorated with black, or fuscous (with two almost obsolete brown dots in the middle, placed longitudinally); hind wings silvery-grey; thighs reddish; tarsi white. Near London, in August.

[z] SYNONYMES.—*Tinea Signipennella*, Hübner.
Ornix Mayrella, Treitschke ♀. *Tinea ciliella*, Wien. Verz.

SPECIES 16.—GRACILLARIA VIOLACEA.—(Haworth; Wood, fig. 1620; and our Plate CXXII., Fig. 7.)—Expands 5½ to 6 lines; fore wings purplish-violet, thickly clouded with blackish-purple; hind wings brown. Darenth Wood, etc.

SPECIES 17.—GRACILLARIA ROSCIPENNELLA.—(Hübner, etc.; Wood, fig. 1621; and our Plate CXXII., Fig. 8.)—Expands 6 to 6½ lines; fore wings pale livid, with a very slight purplish tinge, with two small dots placed obliquely before, and two others placed transversely beyond the middle, with various brown atoms scattered over the wings; the costa minutely spotted with brown; hind wings brown. June, in woods.

SPECIES 18.—GRACILLARIA LEUCAPENNELLA.—(Stephens; Wood, fig. 1622; and our Plate CXXII., Fig. 9.)—Expands 5 to 6 lines; fore wings very pale, silvery-brown or sallow, sometimes whitish-sulphur, more or less sparingly irrorated with brown; hind wings deep brown. New Forest, in June and July.

SPECIES 19.—GRACILLARIA SULPHURELLA.—(Haworth, and our Plate CXXII., Fig. 10.)—Expands 6 to 7 lines; fore wings pale sulphur, finely irrorated with brown, with two very oblique, converging, abbreviated, brown streaks towards the middle of the costa; the apical portion of the wing more tawny; hind wings pale ochreous-brown. Taken in the New Forest, in July.

SPECIES 20.—GRACILLARIA PRÆANGUSTA.—(Haworth; Wood, fig. 1624; and our Plate CXXII., Fig. 11.)—Expands 6 to 6½ lines; fore wings very narrow, ashy, or ashy-brown, with the base of the costa occasionally broadly paler, and with some black lineolæ in the middle of the wing, more or less obsolete, and arranged into an interrupted longitudinal stria. Taken on the trunks of poplars and in hedges, in May.

ACENTROPUS, CURTIS. ACENTRIA, STEPH. ZANCLE, STEPH. (OLIM).

It is in this order, and provisionally in the present situation (although probably nearer to some of the Yponomeutidæ), that I place a singular insect, regarded by Mr. Stephens, at first, as Neuropterous, and subsequently, by him and Mr. Curtis, as Trichopterous; but which possesses two characters eminently distinctive of the Lepidoptera: namely, the presence of a pair of tippets, and a spur at the base of the fore margin of the hind wings*; the legs are, however, entirely destitute of spurs, and the palpi (maxillary ?) large, drooping, and densely clothed with scaly hairs.

SPECIES 1.—ACENTROPUS NIVEUS.—(Latreille; Stephens.)—Expands 6¼ lines; wings white and rather silvery; fore ones with the costa ochreous, and the other margins slightly ochre. Taken in various places, in June; but very rare.

[a] SYNONYMES.—*Frigane blanche*, Oliv. *Acentropus Garnonsii*, Curtis, Brit. Ent., pl. 497.
Zancle Hansoni, Steph.; Nomencl. *Acentria nivosa*, Steph. Catal.

* See my article on this insect, in Trans. Ent. Soc., 1, p. 117, and Introd. to Mod. Class. Ins., 2, pp. 324 and 412, figs. 113, 11—17.

Family ALUCITIDÆ, Leach. PTEROPHORITIS, Latreille.

With the exception of one species, the insects in this curious group have the wings singularly cleft into narrow feathered rays; the fore wings having two, three, four, or six; and the hind ones three or six; they are carried horizontally, in repose; the antennæ are long and setaceous. The spiral tongue is long, but the maxillary palpi are wanting, in which respect these insects approach the Yponomeutidæ. The legs are long and slender, the fore tibiæ with one, the intermediate with two apical, and the posterior with two apical and two subcentral spurs. The species are of small size. They vary in the time of their flight; the Pterophori being crepuscular, flying over low plants, whilst Alucita frequents our gardens and enters our houses, sitting with its beautiful wings expanded. The former insects have the habit of folding their wings, so as to appear to consist of a single broad ray. The larvæ somewhat resemble those of the Arctiidæ, being sparingly clothed with rather long hairs, and with six feet; they are very inactive; the pupæ are variable, being either naked and enclosed in a transparent silken cocoon, or elongate-ovate, conical, hairy, and suspended perpendicularly by a thread, or affixed by hooks at the posterior extremity of the body to a layer of silk on leaves. (See Réaumur, Mém., 1, pl. 19, 20. De Geer, Mém., tom. ii. pl. 4, f. 1—1. Harris and L'Admiral.)

DESCRIPTION OF PLATE CXXIII.

Insects.—Fig. 1. Agdistes Bennetii (the plumeless plume).
„ Fig. 2. Pterophorus pentadactylus (the large white plume).
„ Fig. 3. Pterophorus spilodactylus (the wormwood plume).
„ Fig. 4. Pterophorus galactodactylus (the spotted white plume).
„ Fig. 5. Pterophorus bipunctidactylus (the grey-wood plume).
„ Fig. 6. Pterophorus fuscodactylus (the brown-wood plume).
„ Fig. 7. Pterophorus pterodactylus (the common plume).
„ Fig. 8. ——— the caterpillar.
„ Fig. 9. ——— the chrysalis.
„ Fig. 10. Pterophorus monodactylus (the hoary plume).
„ Fig. 11. Pterophorus tephradactylus (the plain plume).
„ Fig. 12. Pterophorus tridactylus (the dotted-bordered plume).
Insects.—Fig. 13. Pterophorus niveidactylus (the snowy plume).
„ Fig. 14. Pterophorus tetradactylus (the white-shafted plume).
„ Fig. 15. Pterophorus carphodactylus (the citron plume).
„ Fig. 16. Pterophorus ochrodactylus (the ochreous plume).
„ Fig. 17. Pterophorus leucodactylus (the lemon plume).
„ Fig. 18. Pterophorus lunædactylus (the crescent plume).
„ Fig. 19. The caterpillar of *Porrectaria Anatipennella*, figured in Plate 113, fig. 38.
Plant. — Fig. 20. Convolvulus Arvensis (common bindweed).

The insects in this plate are figured from specimens in the cabinet of Mr. Bentley, with the exception of 1, 3, 11, and 13, from Wood.
The caterpillars are from Hübner. H. N. H.

AGDISTES, Hübner. ADACTYLUS, Curtis.

The body and legs are very long and slender, with very short tibial spurs; the wings are entire, and the palpi are short and truncate.

Species 1.—Agdistes Bennetii.—(Curtis, Brit. Ent., pl. 471; Wood, fig. 1625; and our Plate CXXIII., Fig. 1.)—Expands 1 inch; fore wings reddish-ashy, with four small dark spots on each, placed longitudinally; abdomen of the female with five or six pairs of black dots down the back. Taken at the end of July, on the Salterns, at Tollsbury, Essex.

PTEROPHORUS, Geoffroy. ALUCITA, Haworth.

The body and legs are long and slender; the tibiæ being furnished with long spurs; the wings are deeply cleft; the anterior being composed of two, and the hind ones of three feathers; and the palpi are slender,

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slightly curved upwards, with the terminal joint as long as, but slenderer than, the preceding. Mr. Stephens divides the species into the following sections:—

A. Posterior wings without a scaly lobe on the abdominal ray.

a. Fore wings broad, deeply cleft, and pale coloured.

Species 1.—Pterophorus pentadactylus.—(Linnæus; Harris, Aurelian, pl. 1, fig. *o—q*; Donovan, 4, pl. 110; Wood, fig. 1626; and our Plate CXXIII., Fig. 2.)—Expands 12 to 15 lines; all the wings snow-white, and satiny. The caterpillar is greenish-white, with dusky dots, with a white line on the back, and an ochreous lateral one; it feeds on nettles, and the moth appears in June and July.

Species 2.—Pterophorus spilodactylus.—(Curtis, Brit. Ent., pl. 161; Wood, fig. 1627.)—Expands 11 lines; fore wings obtuse at the tips, with the base and costa pale brown, with an oblique interrupted brown streak in the middle of the wing, and each plume of the fore wings with several paler spots near the tip; hind wings pale brown, varied with white. Taken, in July, on the coast of Dorsetshire, and in Suffolk, near Mildenhall.

Species 3.—Pterophorus galactodactylus[b].—(Hübner, etc.; Wood, fig. 1628; and our Plate CXXIII., Fig. 4.)—Expands 11 to 11½ lines; fore wings subacute at the tips, whitish, with a geminated brown spot at the origin of the cleft, a larger one beyond on the costa, with an opposite one on the inner margin, and two minute darker subapical ones; hind wings whitish, with a faint dot at the tip of each lobe. The caterpillar is light green and hairy, and feeds on the burdock. (H. Doubleday, in "Entomologist," p. 356.) Rare, but widely dispersed; appearing about the beginning of June.

[b] Synonyme.—*Alucita albodactyla*, Fabricius (?).

b. Fore wings narrow, deeply cleft, and acute, generally without any distinct markings.

Species 4.—Pterophorus bipunctidactylus.—(Villers, etc.; Wood, fig. 1629; and our Plate CXXIII., Fig. 5.)—Expands 11 to 12 lines; fore wings ashy, with a black dot at the base, and two at the origin of the cleft, and a dusky streak on the costa and inner margin; hind wings and fringe rusty-brown. In woods, in June and July.

Species 5.—Pterophorus fuscodactylus.—(Villers, etc.; Wood, fig. 1630; and our Plate CXXIII., Fig. 6.)—Expands 10 to 11½ lines; fore wings darker or lighter testaceous brown, with a faintly darker dot at the origin of the cleft; hind wings brown. Common in woods and gardens, in June and July.

Species 6.—Pterophorus pterodactylus[c].—(Linnæus, etc.; Harris, Aurelian, pl. 30, fig. i—l; Wood, fig. 1631; and our Plate CXXIII., Figs. 7, 8, 9.)—Expands 11 to 13½ lines; fore wings varying in colour from whitish, hoary, reddish, or testaceous red, and slightly atomose, with a brown dot near the base of the cleft; hind wings brown. Common in woods, gardens, etc., towards the end of the summer. The caterpillar feeds on the thistle, and when full fed, fixes the extremity of its body to a piece of stick, with the head upwards, jerking itself backwards, so as entirely to reverse its position for a short time when disturbed.

[c] Synonyme.—*Phalæna didactyla*, Berkenhout; Stewart.

Species 7.—Pterophorus monodactylus.—(Linnæus, etc.; Wood, fig. 1632; and our Plate CXXIII., Fig. 10.)—Expands 9½ lines; fore wings hoary, retuse, with the cleft not very conspicuous; hind wings brown, three-cleft. Taken in the Kent and Surrey woods, in June.

SPECIES 8.—PTEROPHORUS TEPHRADACTYLUS.—(Hübner, etc.; Wood, fig. 1633; and our Plate CXXIII., Fig. 11.)—Expands 9½ lines; fore wings rather short and broad, whitish-grey, with brown atoms and fringe; hind wings and fringe brown. Taken, in July, in Surrey, Norfolk, Hants, etc.

SPECIES 9.—PTEROPHORUS TRIDACTYLUS.—(Linnæus, etc.; Wood, fig. 1634; and our Plate CXXIII., Fig. 12.)—Expands 9½ to 10 lines; fore wings cleft and pale, with white lines; hind wings whitish; fringe of all the wings brown. Darenth Wood and near Brighton, in June.

SPECIES 10.—PTEROPHORUS NIVEIDACTYLUS..—(Stephens; Wood, fig. 1635; and our Plate CXXIII., Fig. 13.)—Expands 8 to 9 lines; all the wings obscure snowy-white, with ashy fringe. Darenth Wood, in July, but very rare.

SPECIES 11.—PTEROPHORUS TETRADACTYLUS[d].—(Linnæus, etc.; Wood, fig. 1636; and our Plate CXXIII., Fig. 14.)—Expands 9½ to 10 lines; fore wings yellowish, or testaceous white on the disk, leaving only the margins or fringe dusky; hind wings pale brown, with dusky fringe; legs white, Near London, Ripley, Dover, etc., in June, but rare.

[d] SYNONYMES.—*Phalæna Alue. didactyla*, Scopoli.
Phalæna Aluc. tridactyla, Villers.

SPECIES 12.—PTEROPHORUS CARPHODACTYLUS.—(Hübner, etc.; Wood, fig. 1637; and our Plate CXXIII., Fig. 15.)—Expands 7 to 9 lines; fore wings yellowish, with a small brown dot near the apex of the costa, and another opposite to it on the inner margin; hind wings slightly ochreous, with ashy-brown fringe. Coombe Wood, Dover, Whittlesea Mere, etc., in June and August.

SPECIES 13.—PTEROPHORUS OCHRODACTYLUS.—(Fabricius, etc.; Wood, fig. 1638; and our Plate CXXIII., Fig. 16.)—Expands 8½ lines; fore wings ochreous, with pale brown fringe; hind wings pale ashy-brown. Darenth Wood, July.

SPECIES 14.—PTEROPHORUS LEUCODACTYLUS—(Hübner, etc.; Wood, fig. 1639; and our Plate CXXIII., Fig. 17.)—Expands 5½ lines; fore wings pale sulphur coloured; hind wings and fringes of all the wings brown. Darenth Wood, at the end of June; rare.

SPECIES 15.—PTEROPHORUS LUNÆDACTYLUS[e].—(Haworth, etc.; Wood, fig. 1640; and our Plate CXXIII., Fig. 18.)—Expands 10 to 11 lines; fore wings fuscous-brunneous, with a yellowish-white slightly-curved mark at the base of the cleft; hind wings and fringe brown. Darenth, Greenhithe, etc., about the beginning of July. The caterpillar, according to Mr. Jordan (Zoologist, p. 434), feeds on ononis arvensis, on the heads of which it may be generally found. It is green and slightly hairy.

[e] SYNONYME.—*Alucita phæodactyla*, Hübner.

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DESCRIPTION OF PLATE CXXIV.

INSECTS.—Fig. 1. Pterophorus pallidactylus (the pale plume).
„ Fig. 2. Pterophorus migadactylus (the chalk-pit plume).
„ Fig. 3. Pterophorus similidactylus (the dusky plume).
„ Fig. 4. Pterophorus trigonodactylus (the triangle plume).
„ Fig. 5. Pterophorus rhododactylus (the rose plume).
„ Fig. 6. ——————————— the Caterpillar.
„ Fig. 7. ——————————— the Chrysalis.
„ Fig. 8. Pterophorus calodactylus (the beautiful plume).
„ Fig. 9. ——————————— the Caterpillar.
„ Fig. 10. ——————————— the Chrysalis.
„ Fig. 11. Pterophorus tesseradactylus (the marbled plume).
„ Fig. 12. Pterophorus punctidactylus (the brindled plume).
„ Fig. 13. Pterophorus cosmodactylus (the dark-brindled plume).
„ Fig. 14. Pterophorus didactylus (the spotted rusty plume).
„ Fig. 15. Pterophorus heterodactylus (the spotted black plume).
„ Fig. 16. Pterophorus microdactylus (the small plume).
„ Fig. 17. ——————————— the Caterpillar.
INSECTS.—Fig. 18. Pterophorus microdactylus (the Chrysalis).
„ Fig. 19. Alucita hexadactyla (the six-cleft plume).
„ Fig. 20. Alucita polydactyla (the many-cleft plume).
„ Fig. 21. Alucita pœcilodactyla (the dark six-cleft plume).
PLANTS.—Fig. 22. Gentiana acaulis (dwarf gentian).
„ Fig. 23. Ononis procurrens (trailing rest harrow).

Nos. 1, 11, 13, 19, 20, and 21 are from the accurate figures in Wood; the caterpillars are from Hübner; the rest of the insects are from the cabinet of Mr. Bentley, for whose great liberality, in allowing the whole of his specimens in succession to be removed (notwithstanding the risk to minute and fragile species), for the purpose of more deliberate examination and delineation, we have to return cordial thanks, and express our great obligation, as also for the information and suggestion supplied by him. We have also to return thanks for the aid we have received in the prosecution of our laborious task from Messrs. Stephens, Chant, E. and H. Doubleday; as well as to other gentlemen, whose names are recorded in our pages in conjunction with the facts or species which they have communicated. H. N. H. and I. O. W.

SPECIES 16.—PTEROPHORUS PALLIDACTYLUS[f].—(Haworth, etc.; Wood, fig. 1641; and our Plate CXXIV., Fig. 1.)—Expands 12 to 13 lines; fore wings ochroleucous, with various darker clouds, a whitish spot at the base of the inner margin, and another near the apex of the costa; fringe white; hind wings brownish-ochre, with brown fringe. Taken in chalky places in Kent, Hertford, Surrey, etc., in June.

[f] SYNONYME.—*Alucita ochrodactyla*, Hübner (?).

SPECIES 17.—PTEROPHORUS MIGADACTYLUS.—(Fabricius (?); Haworth, etc.; Wood, fig. 1642; and our Plate CXXIV., Fig. 2.)—Expands 12 lines; fore wings whitish, spotted with brown; hind wings brown; legs white spotted with brown. Darenth Wood, June; rare.

SPECIES 18.—PTEROPHORUS SIMILIDACTYLUS.—(Curtis, MSS.; Stephens; Wood, fig. 1643; and our Plate CXXIV., Fig. 3.)—Expands 9 lines; fore wings ochreous-grey, partially irrorated with black; the costa and apical portion of the inner margin darker; hind wings and fringe brown. New Forest, Isle of Wight, etc., and near Edinburgh.

B. Posterior wings with a broad scaly lobe on the abdominal ray.

a. Fore wings broad and acute.

SPECIES 19.—PTEROPHORUS TRIGONODACTYLUS.—(Haworth, etc.; Wood, fig. 1644; and our Plate CXXIV., Fig. 4.)—Expands 10 to 11 lines; fore wings pale ochre, with a trigonate brown patch near the extremity of the costa, and a faint pale streak on the hinder margin; hind wings deep brown. Near London, Hants, and Yorkshire.

SPECIES 20.—PTEROPHORUS RHODODACTYLUS.—(Fabricius, etc.; Stephens, pl. 41, fig. 3; Wood, fig. 1645; and our Plate CXXIV., Figs. 5, 6, 7.)—Expands 10 to 11 lines; wings tawny-red, the fore ones with a rather broad, irregular, whitish fascia across the middle, extending slenderly along the inner margin nearly to the base, and beyond this an oblique, narrower, rather oblique, white streak; the intermediate space darker; the tips of the two lobes with a white spot, edged with brown; anal lobe of hind wings large and ferruginous. Near London, Coombe Wood, etc., but rare.

SPECIES 21.—PTEROPHORUS CALODACTYLUS.—(Wien. Verz., etc.; Wood, fig. 1646; and our Plate CXXIV., Fig. 8.)—Expands 9 to 10 lines; fore wings ashy-brown, with the tips more obscure, and marked with a large fulvous spot, the inner margin dentated; hind wings blackish, with the anal lobe blackish. Near London, New Forest, Scotland, etc., in August.

b. Fore wings narrow, falcate, and variegated.

SPECIES 22.—PTEROPHORUS TESSERADACTYLUS.—(Linnæus, etc.; Wood, fig. 1647; and our Plate CXXIV., Fig. 11.)—Expands 9 to 9½ lines; fore wings subfalcate, clouded with white and brown, with a trigonate brown spot towards the extremity of the costa edged externally with a white fascia and with a subapical white striga; the base of the costa with whitish lineolæ; hind wings brown; anal lobe black. New Forest, near London, etc.

SPECIES 23.—PTEROPHORUS PUNCTIDACTYLUS[g].—(Haworth, etc.; Wood, fig. 1648; and our Plate CXXIV., Fig. 12.)—Expands 9 to 9½ lines; fore wings greenish-ashy, with whitish clouds, and numerous short white costal lineolæ, and a nearly obsolete, slightly-waved, whitish, subapical striga; hind wings deep brown; anal lobe black. Near London and in Devonshire, in June and July.

[g] SYNONYME.—*Alucita acanthodactyla*, Hübner (?).

SPECIES 24.—PTEROPHORUS COSMODACTYLUS.—(Hübner, etc.; Wood, fig. 1649; and our Plate CXXIV., Fig. 13.)—Expands 9 lines; fore wings olive-brown; the costa with minute whitish spots, an obscure, darker, subapical, triangular spot, and a very obscure, pale, subapical streak; hind wings deep brown; anal lobe blackish. Ripley, in June; but very rare.

SPECIES 25.—PTEROPHORUS DIDACTYLUS[h].—(Linnæus; Donovan, ix., pl. 318; Wood, fig. 1650; and our Plate CXXIV., Fig. 14.)—Expands 8 to 9 lines; fore wings dull ferruginous, with two white strigæ beyond the middle, the outer one running along the costa to the tip; hind wings ashy-brown, with the tips darker; anal lobe brown and small. Near London, Norfolk, New Forest, etc., in June and July.

[h] SYNONYME.—*Alucita trichodactyla*, Hübner.

SPECIES 26.—PTEROPHORUS HETERODACTYLUS.—(Villers, etc.; Wood, fig. 1651; and our Plate CXXIV., Fig. 15.)—Expands 9½ lines; fore wings blackish, with white streaks, broken into spots; hind wings brown. Taken with the preceding species.

SPECIES 27.—PTEROPHORUS MICRODACTYLUS.—(Stephens; Wood, fig. 1652; and our Plate CXXIV., Figs. 16, 17, 18.)—Expands 6 to 6½ lines; fore wings brown, with a white striga beyond the middle, and some apical white spots; hind wings brown. Darenth Wood and Devonshire, in June, but very rare.

ALUCITA, SCOPOLI.

The triangular many-cleft wings, short body, and long porrected palpi, with the terminal joint very slender, distinguish this genus at once from the foregoing. Each wing is composed of six beautifully-fringed flat feathers, all of which are expanded when the animal is at rest.

SPECIES 1.—ALUCITA HEXADACTYLA.—(Linnæus, etc.; Harris, Expos., pl. 2, fig. 7, pl. 3, fig. 1; Donovan, iv., pl. 136; Wood, fig. 1653; and our Plate CXXIV., Fig. 19.)—Expands 7 to 8 lines; wings ochreous-brown; the costa spotted with violet-black, with a broad fascia across the middle having paler edges, and a narrower

subapical fascia not extending to the anal angle; hind wings with four denticulated ochreous lines, the rays dotted with black. Common in houses, etc., from March to October. The caterpillar feeds on the honeysuckle, and forms a transparent silken cocoon.

Species 2.—Alucita polydactyla.—(Hübner, etc.; Wood, fig. 1654; and our Plate CXXIV., Fig. 20.) —Expands 7 lines; fore wings yellowish-red, with two irregular, rather violet fasciæ, margined with whitish; at the apex of each feather is a dusky dot on a light ground; hind wings of lighter hue, with a black-brown dot at the tip of each plume; fringe reddish-ash. New Forest, in June.

Species 3.—Alucita pœcilodactyla.—(Stephens; Wood, fig. 1655; and our Plate CXXIV., Fig. 22.) —Expands 7 lines; "fore wings ochreous-ash colour, with two irregular fuscous fasciæ, one towards the middle, the other on the hinder margin. Taken in June, 1822, in the New Forest, near Brockenhurst.''—Stephens. Mr. Curtis, however, suggests that the last two species may be only varieties of the first.

ADDENDA AND CORRIGENDA

TO

THE BRITISH BUTTERFLIES AND MOTHS.

BRITISH BUTTERFLIES.

Page 64, ARGE GALATHEA.—A remarkable variety of this species is described by Mr. Marshall, in the "Zoologist," p. 471, of a clear milky-white, without the smallest speck of black either on the upper or under side. The body is also entirely white. It was taken in the heights, between Dover and Walmer, at the end of July.

Page 78, OREINA MELAMPUS.—Fuesslin; Boisduval, etc. (but not of Esper); Newman, "Zool." p. 729. Expands about $1\frac{1}{2}$ to $1\frac{3}{4}$ inch; wings above blackish-brown, the fore ones above with an irregular subapical ferruginous fascia broken into five or six spots; all, except the outer ones, enclosing a black spot (more distinct in the female); hinds wings with a subapical row of three ferruginous spots, each bearing a black dot. Beneath, with the disk red-brown, with broad brownish margins with the fascia and spotless distinct; hind wings rufo-atomose, and with the three spots and black dote. Taken by Mr. Weaver, in July, 1844, on marshy ground, amongst the mountains, near Kinloch Rannoch, in Perthshire.

BRITISH MOTHS. VOL. I.

Page 46, Hepialus carnus.—"The insect known by this name, in England, is a mere variety of H. velleda: the true H. carnus is very distinct, and has not been found in Britain." Mr. H. Doubleday, in Zoologist, p. 332.

Page 66, Notodonta Tritopha.—Fabricius, Esper, Ochs., Hübner (text), (but not Hübner's fig. 29 so named, nor of Donovan, who figures Peridea under that name), (torva, Hübner, f. 27, but not of Ochsenheimer). Head and thorax brown; abdomen ashy; fore wings clouded with brown, and with several obsolete waved darker strigæ; in the centre is a white lunule, with a lunate ferruginous pupil; hind wings white, with a brown streak on the anal angle. Caterpillar solitary, naked, green, with three dorsal prominences, and the tail obtuse; head brown (Fabr.) Reared by J. W. Douglas, Esq., on the 10th August, from the larva found in an excursion along the Essex coast.

Page 75, Cerura bicuspis.—Stephens. "This is the C. furcata of the Continent. Hübner's bicuspis is very distinct." Mr. H. Doubleday, in Zool., p. 332.

Pages 90, 91, Porthesia chrysorrhœa and auriflua.—"These names are reversed in England, chrysorrhœa of the continental authors being phæorrhea of Curtis and Donovan, and auriflua, the chrysorrhœa of English authors." Mr. H. Doubleday, in Zool., p. 332.

Page 108, Triphæna subsequa.—Wien. Verz., etc. "Mr. Bentley possesses two specimens of this species, one captured by himself, in Hampshire; the other from Mr. Stone's cabinet, probably taken in the same county. The insect figured and described by Mr. Curtis [under the name of T. consequa, Hübner] is a totally distinct species, and I believe unique, though it is possible that it may be common in some parts of Scotland. It does not seem to be known upon the Continent." (H. Doubleday, in Zool., p. 399.) Mr. Newman (*ibid.*) proposes to name it *Tr. Curtisii*.

Page 123, Agrotis pascuea, of Curtis, "is Hadena australis of Boisduval; Aporophyla australis, of Guénée." H. Doubleday, in Zool., p. 332.

Page 135, Orthosia gracilis.—Stephens. Noctua subplumbea, Haworth, is "the Orthosia populeti of Boisduval, etc., and Noctua populeti of Fabricius." H. Doubleday, in Zool., p. 332.

Page 136, Orthosia sparsa, Stephens, etc., is "the true Orthosia gracilis of continental authors." H. Doubleday, in Zool., p. 332.

Page 139, "Orthosia lunosa is identical with the H. subjecta of Duponchel and O. agrotoides of Guénée, but Haworth's name having the priority, must, of course, stand. Orthosia humilis, Hübner, is a totally distinct species, with the under wings entirely fuscous, and nearly allied to O. pistacina." H. Doubleday, in Zool., p. 399.

Page 141, Mythimna grisea, Stephens, "is the true Lythargyria of Hübner, etc." H. Doubleday, in Zool., p. 332.

Page 151, Pyrophila tragopoginis and tetra.—"We have only the former species in Britain; P. tetra is a totally different species, with copper-coloured wings. H. Doubleday, in Zool., p. 332.

Page 155, "Xylira semibrunnea of English authors is the true X. petrificata, and petrificata of English cabinets is the X. oculata of Germar." H. Doubleday, in Zool., p. 332.

Page 165, "Hadena ochracea, of Stephens, is the Dianthesia Echii, of Boisduval." H. Doubleday, in Zool., p. 332.

Page 178, Apamea unanimis, Ochs.—"This is the species known in this country under the name of *A secalina*, but the secalina of Hübner is a mere variety of A didyma." H. Doubleday, in Zool., p. 332.

Page 178, "The insect taken at York, by my friend, Thomas H. Allis, and supposed to be *Apamea unanimis*, is *Orthosia congener* of Boisduval, of which Caradrina iners of Treitschke is a variety." H. Doubleday, in Zool., p. 332.

Page 179, "Miana literosa, Stephens, is the M. suffuruncula of Ochs." H. Doubleday, in Zool., p. 332.

Page 181, Miana Duponchelii, Boisduval. "This species occurs in Britain, and is probably the Noctua minima of Haworth." H. Doubleday, in Zool., p. 332.

Page 187, "Miselia compta of British cabinets is Noctua conspersa, W. V. I have not seen a British specimen of compta, though it probably occurs here. The genus DIANTHESIA, of Boisduval, is a most natural one, although the British species belonging to it have been placed in three or four different genera, and associated with species to which they seem very little allied. The following are the British species :—

1. Dianthesia albimacula, Borkh.
2. D. conspersa, W. V.
3. D. cæsia, W. V.
4. D. capsincola, Borkh.
5. D. cucubali, W. V.
6. D. Echii, Borkh." H. Doubleday, in Zool., p. 332.

Page 214, Nonagria crassicorius.—"The eggs of this species are deposited on the edges of the leaves of reeds in the autumn, and are not hatched till the following April." See H. Longley's Notes on this species, in Zoologist, p. 581.

Page 224, "Cucullia solidaginis, Stephens, appears to be C. Gnaphalii, Hübner." H. Doubleday, in Zool., p. 332.

Page 236, Heliothis armigera, Hübner, Treitschke, etc. A female of this additional species was taken in September, 1840, at Salford, near Manchester (R. S. Edleston, in Zool., p. 260).

Page 251, "Brepha notha and Parthenias. The specimen in the Linnæan cabinet, with Linne's label on the pin 'Parthenias,' is the larger species, with simple antennæ, or what in this country is usually called 'Notha.' Thus proving that the continental lepidopterists are correct. The species will stand thus :—

BREPHA, Hübner.

1. *Parthenias*, Linn. (*Notha*, Haworth, etc.)
2. *Notha*, Hübner. (*Parthenias*, Haworth, Stephens, etc.)" H. Doubleday, in Zool., p. 399.

BRITISH MOTHS. VOL. II.

Page 185, line 3, *Add*, Taken in gardens, in the autumn (Mr. Bentley).

Page 226, Eudorea angustea and pallida. These two species are stated by Mr. Jordan to be double-brooded, appearing in May, and again in September and October, Zool., p. 334.

ALPHABETICAL LIST OF THE NAMES

OF

THE FAMILIES AND GENERA OF MOTHS DESCRIBED IN THE SECOND VOLUME.

OBS.—*The names printed in capitals are those of the Families; those in ordinary Roman characte s are those of the Genera adopted; and those in the like type, but with the number of the pages enclosed in parentheses, are the Synonymical names of the Genera, the introduction of which into this Index has been thought to be of material service in facilitating references to the text. Where two or more numbers to pages are given, those enclosed in parentheses refer to names used synonymically.*

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Thomas Harrild, Printer, Silver Street, Falcon Square, London.

SYNOPSIS OF THE SPECIES OF BRITISH MOTHS

DESCRIBED AND FIGURED IN THIS WORK, ARRANGED ACCORDING TO THE CATALOGUE OF BRITISH LEPIDOPTERA, PUBLISHED BY ORDER OF THE TRUSTEES OF THE BRITISH MUSEUM, IN 1850,

BY THE LATE J. F. STEPHENS.

OBS.—*The names in the first column are those adopted by Mr. Stephens in his Museum Catalogue; and those in the second are those used in this work, which will require to be made conformable with the former. The names printed in italics are those of species whose claim to be considered as British is either doubtful or rejected.*

FAMILY I.—ANTHROCERIDÆ, Westwood. (ZYGÆNIDÆ, Leach, Steph.)

		PLATE	FIG.
Procris Statices	Ino Statices	6	8—10
Procris globulariæ	I. globulariæ (p. 28)		
Anthrocera Loniceræ	Anthrocera Meliloti.	8	18
Anthrocera Trifolii	A. Trifolii	8	17
Anthrocera Trifolii, var.	A. Loti	6	15, 16
Anthrocera Filipendulæ	A. Filipendulæ	6	11—14
Anthrocera Filipendulæ, var.	A. Hippocrepidis	6	31

FAMILY II.—SPHINGIDÆ.

Smerinthus ocellatus	Smerinthus ocellatus	1	1—3
Smerinthus Populi	S. Populi	1	4—6
Smerinthus Tiliæ	S. Tiliæ	1	7—9
Acherontia Atropos	Acherontia Atropos	2	
Sphinx Convolvuli	Sphinx Convolvuli	3	1—3
Sphinx Ligustri	S. Ligustri	3	4—6
Sphinx Pinastri	S. Pinastri	3	7—9
Deilephila Euphorbiæ	Deilephila Euphorbiæ	4	1—3
Deilephila Galii	D. Galii	4	4, 5
Deilephila Livornica	D. Livornica	4	6—8
Chœrocampa celerio	Chœrocampa celerio	5	4—6
Chœrocampa porcellus	C. porcellus	5	9, 10
Chœrocampa Elpenor	C. Elpenor	5	7, 8
Daphnis Nerii	C. Nerii	5	1—3

FAMILY III.—SESIIDÆ.

Macroglossa stellatarum	Macrog. stellatarum	6	1—3
Sesia Fuciformis	Sesia Fuciformis	6	7
Sesia Bombyliformis	S. Bombyliformis	6	4—6

FAMILY IV.—TROCHILIIDÆ, Westwood. (ÆGERIIDÆ, Steph.)

Sphecia apiformis	Sphecia apiformis	7	2—16
Sphecia bembeciformis	S. bembeciformis	7	1—15
Trochilium Vespiforme	Trochilium Vespiforme	7	3
Trochilium Chrysidiforme	T. Chrysidiforme	7	4
Trochilium Ichneumoniforme	T. Ichneumoniforme	7	7
Trochilium Cynipiforme	T. Cynipiforme	7	6
Trochilium Sphægiforme	T. Sphægiforme	7	5
Trochilium Allantiforme	T. Andrenæforme	7	10
Trochilium Tipuliforme	T. Tipuliforme	7	9
Trochilium Myopæforme	T. Myopæforme	7	11
Trochilium Myopæforme, var	T. Stomoxyforme	7	13
Trochilium Culiciforme	T. Culiciforme	7	12
Trochilium Formicæforme	T. Formicæforme	7	14
Trochilium Philanthiforme	*T. Philanthiforme*	7	8

FAMILY V.—HEPIALIDÆ.

		PLATE	FIG.
Hepialus Hectus	Hepialus Hectus	8	1, 2
Hepialus lupulinus	H. lupulinus	8	3—5
Hepialus Humuli	H. Humuli	8	7—9
Hepialus Velleda	H. Velleda	8	10, 11
Hepialus Velleda, var.	H. Carnus	8	14
Hepialus Sylvinus	H. Sylvinus	8	12, 13
Zeuzera Æsculi	Zeuzera Æsculi	9	4—6
Phragmatœcia Arundinis	Z. Arundinis	9	7, 8
Cossus ligniperda	Cossus ligniperda	9	1—3

FAMILY VI.—NOTODONTIDÆ.

Phalera bucephala	Hammatophora bucephala	13	3
Clostera reclusa	Clostera reclusa	13	6, 7
Clostera reclusa, var.	C. suffusa	13	8
Clostera anastomosis	*C. anastomosis*	13	5, 5
Clostera anachoreta	C. anachoreta	13	9, 9
Clostera curtula	C. curtula	13	10, 10
Cerura bicuspis	Cerura bicuspis	15	1, 2, 11
Cerura furcula	C. furcula	15	4, 5, 6
Cerura bifida	C. bifida	15	8, 9
Cerura bifida, var.	C. latifascia	15	7
Cerura bifida, var.	C. arcuata	15	3
Cerura bifida, var.	C. fuscinula	15	10
Cerura vinula	C. vinula	15	12, 13
Cerura erminea	*C. erminea*	15	14, 15
Stauropus Fagi	Stauropus Fagi	13	1, 2
Notodonta dromedarius	Notod. dromedarius	13	11
Notodonta dromedarius, var.	N. perfusca	13	12
Notodonta Tritophus	N. Tritophus	1	66
Notodonta Zic-zac	N. Zic-zac	13	14, 15
Phæosia dictæa	Leiocampa dictæa	13	16, 17
Phæosia dictæoides	L. dictæoides	13	18, 19
Lophopteryx Camelina	Lophopteryx Camelina	14	1, 2
Lophopteryx cucullina	L. cucullina	14	3, 2
Lophopteryx Carmelita	L. Carmelita	14	5
Pterostoma palpina	Pterostoma palpina	14	6
Ptilophora plumigera	Ptilophora plumigera	14	18, 19
Drymonia Chaonia	Drymonia Chaonia	14	13, 14
Drymonia Dodonæa	D. Dodonæa	14	11
Drymonia Querna	*Drymonia Querna*	14	16, 17
Gluphisia crenata	Gluphisia crenata	14	15
Diloba cœruleocephala	Disphragis cœruleocephala	16	4, 4

		PLATE	FIG.
Petasia cassinea	Petasia cassinea	14	7, 8
Peridea trepida	Peridea trepida	14	9, 10
Endromis versicolor	Endromis versicolor	16	1—3
FAMILY VII.—BOMBYCIDÆ.			
Saturnia Pavonia minor	Sat. Pavonia minor	10	1, 2
Lasiocampa Rubi	Lasiocampa Rubi	11	1—4
Lasiocampa Trifolii	L. Trifolii	11	5, 6, 7
Lasiocampa Quercus	L. Quercus	11	9—13
Lasiocampa Quercus, var.	L. Roboris	11	8—12
Lasiocampa Dumeti	*L. Dumeti*	11	14
Eriogaster lanestris	Eriogaster lanestris	10	3, 4
Pœcilocampa Populi	Pœcilocampa Populi	10	7, 8
Cnethocampa Pityocampa	*Cneth. Pityocampa*	10	5, 6
Trichiura Cratægi	Trichiura Cratægi	10	13, 14
Clisiocampa castrensis	Clisiocampa castrensis	10	9, 10
Clisiocampa Neustria	C. Neustria	10	11, 12
Odonestis potatoria	Odonestis potatoria	10	15, 17
Dendrolimus Pini	Odonestis Pini	12	1—3
Gastropacha Quercifolia	Gastr. Quercifolia	14	4—7
Gastropacha Ilicifolia	G. Ilicifolia	12	8, 8
Gastropacha Populifolia	G. Populifolia	12	9, 10
FAMILY VIII.—ARCTIIDÆ.			
Lymantria monacha	Psilura monacha	17	4—7
Hypogymna dispar	Porthetria dispar	17	1—3
Dasychira fascelina	Dasychira fascelina	17	14—16
Dasychira pudibunda	D. pudibunda	17	17—19
Demas Coryli	Demas Coryli	17	20, 21
Orgyia antiqua	Orgyia antiqua	17	8—10
Orgyia gonostigma	O. gonostigma	17	11—13
Lælia cœnosa	Lælia cœnosa	18	5, 6
Leucoma Vau-nigrum	Leucoma Vau-nigrum	18	1
Stilpnotia Salicis	Stilpnotia Salicis	18	2—4
Euproctis chrysorrhœa	Porthesia chrysorrhœa	18	9—11
Euproctis auriflua	Porthesia auriflua	18	7, 8
Hypercampa dominula	Heraclia dominula	19	16, 17
Diacrisia russula	Euthemonia russula	12	11—13
Arctia Caia	Arctia Caia	19	5—8
Arctia villica	A. villica	19	9, 10
Parasemia Plantaginis	Nemeophila Plantaginis	19	14, 15
Phragmatobia fuliginosa	Phrag. fuliginosa	19	1, 2
Spilosoma Menthastri	Spilosoma Menthastri	18	12—14
Spilosoma papyratia	S. papyratia	18	15
Spilosoma papyratia, var.	S. urticæ	18	16
Spilosoma lubricepeda	S. lubricepeda	18	17—19
Cycnia Mendica	Cycnia Mendica	18	20—22
Sterrhopterix nigricans	Pachythelia nigricans	19	3
Sterrhopterix hyalinella	Pachythelia opacella	(p. 94)	
Psyche fusca	Psyche fusca	16	16, 17, 26—28
Fumea radiella	Fumea radiella (muscella, olim)	16	13
Fumea radiella, var.	F. pulla	16	12
Fumea plumella	F. plumella	(p. 82)	
Fumea Bombycella	F. Bombycella	16	14
Fumea nitidella	F. nitidella	16	10
Fumea pectinella	F. pectinella	16	15
Fumea reticella	F. reticella	(p. 83)	
Nudaria mundana	Nudaria mundana	16	19, 20*
Nudaria mundana, var.	N. Hemerobia	16	18
Nudaria senex	N. senex	16	20
Heterogenea Asellus	Heterogenea Asellus	16	8, 9, 30
Limacodes Testudo	Limacodes Testudo	16	5, 7, 29
FAMILY IX.—LITHOSIIDÆ.			
Callimorpha Jacobææ	Callimorpha Jacobææ	19	20, 21
Miltochrysta miniata	Miltochrysta miniata	19	22
Eulepia grammica	Eulepia grammica	20	3, 4
Eulepia cribrum	E. cribrum	20	5
Deiopeia pulchella	Deiopeia pulchella	20	1, 2
Lithosia aureola	Lithosia aureola	20	8, 9
Lithosia helvola	L. helvola	20	15
Lithosia flava	L. flava	20	6
Lithosia flava, var.	L. gilveola	20	11
Lithosia complana	L. depressa	20	14
Lithosia lurideola	L. complanula	20	12, 13
Lithosia griseola	L. griseola	20	10
Lithosia griseola, var.	L. plumbeolata	20	7
Lithosia luteola	L. luteola	(p. 102)	
Lithosia muscerda	L. muscerda	20	16
Œnistis quadra	Œnistis quadra	20	17—19
Atolmis rubricollis	Gnophria rubricollis	20	20, 21
Cybosia mesomella	Cybosia mesomella	20	25
Endrosa irrorella	Philea irrorella	20	22, 23, 24
Endrosa irrorella, var.	P. roscida	(p. 104)	
FAMILY X.—NOCTUIDÆ.			
Triphæna orbona	Triphæna orbona	21	4—12
Triphæna subsequa	T. subsequa	21	5
Triphæna pronuba	T. pronuba	21	2, 3, 11
Triphæna pronuba, var.	T. innuba	21	1
Triphæna interjecta	T. interjecta	21	8
Triphæna fimbria	T. fimbria	21	6, 7, 13
Triphæna Janthina	T. Janthina	21	9
Thalpophila texta	Cerigo Cytherea	21	10
Segetia Xanthographa	Segetia Xanthographa	29	9
Rusina ferruginea	Rusina ferruginea	22	9
Lytæa umbrosa	Lytæa umbrosa	22	1
Lytæa agathina	L. albimacula	22	3
Lytæa agathina, var.	L. leucographa	22	2
Cerapteryx graminis	Cerapteryx graminis	22	8
Charæas cespitis	Charæas cespitis	22	4, 5
Charæas lutulenta	C. fusca	22	6
Charæas Æthiops	C. nigra	22	7
Agrotis segetum	Agrotis segetum	23	3—5
Agrotis corticea	A. corticea	23	6
Agrotis valligera	A. valligera	23	11
Agrotis lunigera	A. lunigera	23	10
Agrotis suffusa	A. suffusa	23	2
Agrotis saucia	A. æqua	23	1
Agrotis annexa	*A. annexa*	23	7
Agrotis subgothica	A. subgothica	24	1
Agrotis obelisca	A. Tritici, var. pupillata	(p. 119)	
Agrotis aquilina	A. aquilina	24	3

		PLATE	FIG.
Agrotis Tritici	A. Tritici	24	5
Agrotis Tritici, var.	A. cuneigera	24	6
Agrotis cursoria	A. cursoria	24	4
Agrotis Ripæ	A. nebulosa	24	3
Agrotis nigricans	A. nigricans	24	10,11,12
Agrotis nigricans, var.	A. Marshallana	24	15
Agrotis exclamationis	A. exclamationis	24	13, 14
Agrotis puta	A. radia	23	12
Agrotis cinerea	A. cinerea	23	8, 9
Cœnophila subrosea	Graphiphora subrosea	25	1
Spœlotis cataleuca	G. renigera	25	2, 3
Spœlotis ravida	G. crassa	25	5
Spœlotis pyrophila	G. pyrophila	25	4
Spœlotis distinguenda	G. latens	(p. 126)	
Spœlotis augur	G. augur	25	6, 7
Spœlotis birivia	*G. birivia*	(p. 127)	
Graphiphora Baja	G. Baja	25	8, 9
Graphiphora brunnea	G. brunnea	25	11
Graphiphora festiva	G. festiva	26	1
Graphiphora Dahlii	G. Dahlii	25	12
Graphiphora Dahlii, var.	G. candelisequa	26	12, 13
Graphiphora rubi	G. bella	26	6
Graphiphora rhomboidea	G. tristigma	25	10
Graphiphora triangulum	G. triangulum	26	3
Graphiphora C. nigrum	G. C. nigrum	26	4, 5
Graphiphora depuncta	G. depuncta	26	14
Graphiphora glareosa	Caradrina glareosa	29	16
Graphiphora musiva	*Graphiphora musiva*	26	10, 11
Graphiphora plecta	G. plecta	26	7, 8
Lycophotia porphyrea	Lycoph. porphyrea	39	1, 2
Semiophora gothica	Semiophora gothica	27	1
		and 29	19
Panolis piniperda	Achatia spreta	39	3, 4
Glæa rubricosa	Glæa rubricosa	30	1, 2
Orthosia instabilis	Orthosia instabilis	27	2—4
Orthosia populeti	O. gracilis	27	9
Orthosia populeti, var.	O. intermedia	27	5
Orthosia gracilis	O. sparsa	28	12
Orthosia gracilis, var.	O. pallida	28	11
Orthosia munda	O. munda	27	6
Orthosia stabilis	O. stabilis	28	1
		and 20	29
Orthosia miniosa	O. miniosa	28	2, 3
Orthosia cruda	O. cruda	27	11
		and 29	12
Orthosia cruda, var.	O. pusilla	27	10
Orthosia lota	O. lota	28	9
Orthosia macilenta	O. macilenta	28	10
Orthosia neglecta	Segetia neglecta	29	10
Orthosia hyperborea?	Agrotis alpina	23	13
Anchocelis litura	Orthosia litura	28	4
Anchocelis pistacina	O. pistacina	28	5—8
Anchocelis lunosa	O. humilis	27	7, 8
Dasycampa rubiginea	Dasycampa rubiginea	30	3, 4
Orrhodia Vaccinii	Glæa Vaccinii	30	5, 6
Orrhodia ligula	G. subnigra	30	7, 8
Eupsilia satellitia	Mecoptera satellitia	30	9

		PLATE	FIG.
Amphipyra pyramideæ	Amphipyra pyramidea	30	11, 12
Scotophila Tragopoginis	Pyroph. Tragopoginis	30	13, 14
Scotophila Tragopoginis, var.	P. tetra	30	15
Nænia typica	Lemuris typica	30	17, 18
Dypterygia Pinastri	Dypterygia Pinastri	30	16
Aporophyla Australis	Agrotis pascuea	24	2
Lithomia Solidaginis	Lithomia Solidaginis	31	8
Xylina pulla	Xylina pulla	31	2
Xylina conspicillaris	X. conspicillaris	31	1
Xylina semibrunnea	X. semibrunnea	31	3
Xylina petrificata	X. petrificata	31	4
Xylina rhizolitha	X. Lambda	31	6
Xylina putris	X. putris	31	5
Calocampa exoleta	Calocampa exoleta	31	9, 10
Calocampa vetusta	C. vetusta	31	11, 12
Xylophasia lithoxylea	Xylophasia lithoxylea	32	1
Xylophasia sublustris	X. sublustris	32	2
Xylophasia polyodon	X. polyodon	32	3
Xylophasia rurea	X. rurea	32	4
Xylophasia rurea, var.	X. combusta	32	5
Xylophasia hepatica	X. characterea	32	6
Xylophasia scolopacina	X. scolopacina	32	8
Hyppa rectilinea	X. rectilinea	32	9, 10
Hydræcia leucostigma	*Apamea fibrosa*	37	1, 2
Apamea nictitans	A. nictitans	37	3, 4
Apamea unanimis	A. unanimis	37	5
Apamea unanimis, var.	A. secalina	37	6
Apamea didyma	A. oculea	37	7—9
Apamea ophiogramma	A. ophiogramma	37	10
Miana strigilis	Miana strigilis	38	2—4
Miana furuncula	M. humeralis	38	5
Miana literosa	M. literosa	38	1
Miana fasciuncula	M. fasciuncula	38	10
Miana pulmonaris	*M. pulmonariæ*	38	11
Celæna Haworthii	Celæna Haworthii	38	14—16
Celæna renigera	*C. renigera*	38	11
Hama basilinea	Hama basilinea	35	7, 8
Hama testacea	H. testacea	35	9
Hama Ypsilon	Orthosia Upsilon	27	12
Hama connexa	Hama connexa	35	10
Hama sordida	H. aliena	35	6
Hama furva	Mamestra Anceps?	36	15
Crymodes Templi	Polia Templi	39	11
Euplexia lucipara	Euplexia lucipara	35	4, 5
Mamestra Persicariæ	Mamestra Persicariæ	11	11, 12
Mamestra Pisi	M. Pisi	36	2, 3
Mamestra oleracea	M. oleracea	36	4, 5
Mamestra suasa	M. suasa	36	6
Mamestra Chenopodii	M. Chenopodii	36	13, 14
Mamestra nigricans	M. nigricans	36	7
Mamestra nigricans, var.	Graphiphora lunulina	26	9
Mamestra albicolon	Mamestra albicolon	36	10
Mamestra Brassicæ	M. Brassicæ	36	8, 9
Hadena arctica	Hadena amica	(p. 162)	
Hadena adusta	Hadena adusta	33	1
Hadena thalassina	H. thalassina	33	3
Hadena Genistæ	H. Genistæ	33	4

		PLATE	FIG.
Hadena contigua	H. contigua	33	5, 6
Hadena gemina	Mamestra furva	36	1
Hadena gemina, var.	Hadena remissa	33	2
Hadena dentina	H. plebeia	33	9, 10
Hadena glauca	H. glauca	33	7, 8
Hadena Protea	H. Protea	34	3, 4
Xylocampa lithoriza	H.? lithoriza	34	2
Neuria Saponariæ	H.? Saponariæ	34	11
Heliophobus popularis	Heliophobus popularis	35	1
Pachetra leucophæa	H. leucophæus	35	2, 3
Dianthecia Cucubali	Hadena? Cucubali	34	5, 6
Dianthecia Capsincola	H.? Capsincola	34	7—10
Dianthecia perplexa	H.? ochracea	34	1
Dianthecia albimacula	Miselia? albimacula	39	16
Dianthecia conspersa	M.? compta	39	15
Eremobia ochroleuca	Eremobia ochroleuca	50	5
Polia Chi	Polia Chi	40	15
Polia serena	P. serena	40	13, 14
Polia Dysodea	P. Dysodea	40	11, 12
Polia flavicincta	P. flavicincta	40	9, 10
Eurois advena	P. advena	40	1
Eurois tincta	P. tincta	40	6
Eurois occulta	P. occulta	40	4, 5
Eurois nebulosa	P. nebulosa	40	2, 3
Eurois herbida	P. herbida	40	7, 8
Chariptera polymita	*P. polymita*	(p. 191)	
Trachea atriplicis	Trachea atriplicis	39	6, 7
Hapalia præcox	Actebia præcox	39	5
Agriopis Aprilina	Miselia Aprilina	39	13, 14
Valeria oleagina	Valeria oleagina	39	8, 9
Miselia oxycanthæ	Miselia oxycanthæ	39	12
Miselia bimaculosa	M. bimaculosa	39	10
Thyatira Batis	Thyatira Batis	41 and 42	13 114
Thyatira derasa	T. derasa	41 and 42	13 116
Diphtera Orion	Diphtera Orion	41 and 42	11 112
Triæna Psi	Acronycta Psi	41 and 42	116 5
Triæna Psi, var.	A. cuspis	(p. 199)	
Triæna tridens	A. tridens	42 and 41	7 18
Acronycta Ligustri	A. Ligustri	42 and 41	1 112
Acronycta Alni	A. Alni	42 and 41	3 114
Acronycta strigosa	A. strigosa	(p. 195)	
Acronycta auricoma	A. auricoma	42 and 41	9 101
Acronycta Menyanthidis	A. Menyanthidis	42	11
Acronycta Rumicis	A. Rumicis	42 and 41	15 121
Acronycta Rumicis, var.	A. Euphorbiæ	42 and 41	13 141
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Xanthia flavago	X. flavago	45	1, 2
Xanthia aurago	X. aurago	45	5
Xanthia citrago	X. citrago	45	7, 8
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Orbona rufina	Orbona rufina	45	11, 12
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Anarta melanopa	A. melanopa	53	9
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Acontia luctuosa	Acontia luctuosa	53	11
Acontia solaris	A. solaris	53	13
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Acontia aprica	*A. aprica*	53	12
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VOLUME II.

FAMILY Geometridæ.

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		PLATE	FIG.
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Mesoleuca procellata	X. procellata	65	14
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Emmelesia blandiata	Emmelesia blandiata	71	17
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Emmelesia ericetata	E. ericetata	71	16
Emmelesia tæniata	E. tæniata	71	19
Emmelesia bifasciata	E. bifasciata	71	21
Emmelesia unifasciata	E. unifasciata	71	20
Cosmorhoe rusticata	E. rusticata	71	22, 23
Hyria auroralis	Hyria auroraria	71	2, 3
Minoa Euphorbiata	Minoa Euphorbiata	71	5, 6
Odezia Chærophyllata	M. Chærophyllata	71	4
Lomaspilis marginata	Pœcilophasia marginata	73	11,12,13
Ptychopoda reversaria	Ptychopoda dilutaria	72	4
Ptychopoda reversaria, var.	P. fimbriolata	72	5
Ptychopoda reversaria, var.	P. cinereata	(vol. ii. p. 73)	
Ptychopoda bisetata	P. bisetata	72	8
Ptychopoda bisetata, var.	P. trigeminata	72	7
Ptychopoda scutulata	P. lividata	72	6
Ptychopoda ornata	P. ornata	72	9
Ptychopoda immutaria	P. incanata	72	10
Ptychopoda immutaria, var.	P. contiguaria	72	11
Ptychopoda virgularia	Acidalia virgularia	73	3
Emmiltis rubricata	Ptychopoda ? rubricata	72	14
Acidalia osseata	Acidalia osseata	73	1
Acidalia margine-punctata	A. margine-punctata	73	2
Acidalia perochraria	A. pallidaria	(vol. ii. p. 77)	
Acidalia subsericeata	A. subsericeata	73	4
Acidalia inornata	A. inornata	73	7
Acidalia degeneraria	A. degeneraria	(vol. ii. p. 76)	
Acidalia aversata	A. aversata	73	5
Acidalia aversata, var.	A. remutata	73	6
Acidalia aversata, var	A. fuliginata	(vol. ii. p. 77)	
Acidalia remutata	A. flos-lactata	73	10
Acidalia remutata, var.	A. lactata	73	9
Acidalia cæspitaria	A. immutaria	72	12, 13
Acidalia fumata	Acidalia fumata	73	8
Strenia clathrata	Strenia clathrata	72	1
Euchoeca heparata	Emmelesia heparata	71	28
Hydrelia sylvata	E. ? sylvata	71	24
Hydrelia Blomeri	E. Blomeri	71	25
Asthena luteata	E. ? luteata	71	27
Asthena ? candidata	E. ? candidata	71	26
Nemoria viridata	Chlorissa viridata	73	14
Nemoria cloraria	C. cloraria	(vol. ii. p. 78)	
Thalera æstivaria	C. thymiaria	73	15, 16
Thalera putata	C. ? putataria	73	17
Timandra imitaria	Timandra imitaria	73	18
Timandra exemptaria	T. variegata	73	19
Timandra emutaria	T. emutaria	73	20
Timandra emutaria, var.	T. subroseata	(vol. ii. p. 79)	
Macaria notata	Macaria notata	73	21, 22
Macaria alternata	M. alternata	73	23
Macaria liturata	M. liturata	73	24, 25
Macaria liturata, var.	M. præatomata	73	29
Macaria unipunctata	*M. unipunctata*	73	31
Ania emarginata	Ania emarginata	73	26
Ania limbata	*A. limbata*	73	28
Ennomos flexula	Ennomos flexula	73	27

FAMILY PLATYPTERICIDÆ.

Platypteryx lacertinaria	Platypteryx lacertula	74	1, 2
Platypteryx lacertinaria, var.	P. cultraria	74	3
Drepana falcataria	Drepana falcataria	74	4, 5
Drepana hamula	D. hamula	74	6
Drepana hamula, var.	D. uncula	(vol. ii. p. 84)	
Drepana unguicula	D. unguicula	74	7
Drepana fasciata	*D. fasciata*	(vol. ii. p. 84)	
Cilix spinula	Cilix compressa	74	8

FAMILY PYRALIDÆ.

Hypena proboscidalis	Hypena proboscidalis	74	9, 10
Hypena rostralis	H. rostralis	74	12, 13
Hypena rostralis, var.	H. palpalis	74	14
Hypena obesalis	*H. obesalis*	74	11
Hypena crassalis	H. crassalis	74	15
Macrochila cribralis	Macrochila cribralis	74	16
Polypogon barbalis	Pechipogon barbalis	74	17, 18
Paracolax tarsicrinalis	Paracolax tarsicrinalis	74	20
Paracolax nemoralis	P. nemoralis	74	21
Paracolax derivalis	P. derivalis	74	19
Æthia emortualis	*Æthia emortualis*	75	1, 2
Colobochyla salicalis	Colobochyla salicalis	75	3
Synaphe angustalis	Synaphe angustalis	75	4
Cledeobia albistrigalis	Cledeobia albistrigalis	75	5
Cledeobia costæstrigalis	C. costæstrigalis	75	6
Camptylochila undulalis	*Camptyloch. undulalis*	75	7
Camptylochila bistrigalis	*C. bistrigalis*	75	8
Aglossa pinguinalis	Aglossa pinguinalis	75	9
Aglossa pinguinalis, var.	A. Streatfieldii	75	12
Aglossa dimidialis	*A. dimidialis*	75	11
Aglossa cuprealis	Hypsopygia cuprealis	75	10
Pyralis farinalis	Pyralis farinalis	75	13

		PLATE	FIG.
Pyralis pictalis	*Pyralis pictalis*	75	15
Pyralis glaucinalis	P. glaucinalis	75	14
Hypsopygia costalis	Hypsopygia costalis	75	16
Pyralis marginatus	*Pyralis marginatus*	(vol. ii. p. 96)	
Agrotera flammealis	Agrotera flammealis	75	17
Dolycharthria punctalis	Margaritia longipedalis	78	3
Diasemia literalis	Diasemia literalis	76	19
Hydrocampa potamogata	Hydroc. potamogata	76	20
Hydrocampa Nymphæata	H. Nymphæata	76	21—23
Hydrocampa Lemnata	H. Lemnata	76	24, 25
Paraponyx stratiotata	Paraponyx stratiotata	76	26
Phlyctænia sambucæ	Phlyctæn. sambucalis	76	27, 28
Eurrhypara urticata	Eurrhypara urticata	77	2
Eudioptis lucernalis	*Eudioptis lucernalis*	76	2
Ebulea verbascalis	Margaritia verbascalis	78	2
Ebulea crocealis	M. ochrealis	77	18
Nascia cilialis	Nascia cilialis	78	9
Udea ferrugalis	Margaritia ferrugalis	77	20
Udea ferrugalis, var.	M. fulvalis	78	1
Mecyna asinalis	M. asinalis	77	6
Epischnia diversalis	*M. diversalis*	77	5
Nomophila noctuella	Nomophila hybridalis	76	30
		and 105	34
Botys verticalis	Margaritia verticalis	77	8
Botys perpendiculalis	M. centrostrigalis	77	9
Botys pandalis	M. angustalis	77	13
Botys pandalis, fem.	M. terminalis	77	14
Botys hyalinalis	M. hyalinalis	77	12
Botys flavalis	M. flavalis	77	17
Botys silacealis	M. glabralis	77	15
Botys pallidalis	*M. pallidalis*	77	16
Botys lancealis	M. lancealis	77	7
Botys fuscalis	M. fuscalis	78	5
Botys fuscalis, var.	M. pulveralis	78	4
Botys fuscalis, var.	M. fimbrialis	78	6
Epicorsia cinctalis	M. cinctalis	77	10
Sitochroa palealis	M. palealis	77	11
Rivula sericealis	M. sericealis	78	11
Mesographe forficalis	Mesographe forficalis	77	3, 4
Evergestis margaritalis	M. margaritalis	78	9, 10
Pionea stramentalis	M. stramentalis	78	8
Spilodes sticticalis	M. sticticalis	78	13
Scopula Ætialis	M. institialis	78	7
Scopula olivalis	M. olivalis	78	14
Scopula prunalis	M. prunalis	78	15, 16
Scopula alpinalis	M. alpinalis	78	12
Cynæda dentalis	Cynæda dentalis	78	17, 18
Pyrausta purpuralis	Pyrausta purpuralis	76	12
Pyrausta ostrinalis	P. punicealis	76	13, 14
Pyrausta punicealis	P. porphyrialis	76	16
Pyrausta cespitalis	P. cespitalis	76	17
Pyrausta cespitalis, var.	P. sordidalis	76	18
Ennychia cingulata	Ennychia angulata	76	10
Ennychia anguinalis	E. anguinalis	76	9
Ennychia rufo-fascialis	*E. rufo-fascialis*	76	11
Anania octomaculata	Anania octomaculata	76	8
Simaëthis Fabriciana	Simaëthis Fabriciana	76	1
Simaëthis Pariana	S. Pariana	76	2—4
Simaëthis Pariana, var.	S. lutosa	76	5
Simaëthis angustata	Simaëthis Myllerana	76	6
Simaëthis angustata, var.	S. punctosa	76	7
Nola cristulalis	Nola strigulalis	78	19
Nola strigula	N. monachalis	78	20
Nola cuculatella	N. cuculatella	78	21
Nola cuculatella, var.	N. fuliginalis	78	22

FAMILY TORTRICIDÆ.

		PLATE	FIG.
Hylophila prasinana	Hylophila prasinana	79	1, 2, 3
Hylophila Quercana	H. Quercana	79	4, 5, 6
Earias clorana	Earias clorana	79	7, 8, 9
Tortrix viridana	Tortrix viridana	79	10
Tortrix palleana	T. palleana	79	11
Tortrix icterana	T. icterana	79	12
Tortrix Viburnana	T. pillerana	79	13, 14
Tortrix Viburnana, fem.	T. galiana	79	15, 16
Lozotænia Forsterana	Lozotænia Forsterana	79	17
Lozotænia Sorbiana	L. Sorbiana	79	18
Lozotænia transitana	L. aceriana	80	12
Lozotænia cinnamomeana	L. cinnamomeana	79	20
Lozotænia heparana	L. heparana	79	19
Lozotænia Ribeana	L. Ribeana	79	21
Lozotænia Ribeana, var.	L. Cerasana	79	23, 24, 25
Lozotænia Ribeana, var.	L. Grossulariana	79	22
Lozotænia Corylana	L. Corylana	79	26
Lozotænia unifasciana	L. croceana	79	27
Lozotænia fulvana	L. oporana	80	5
Lozotænia fulvana, var.	L. Rosana	80	3
Lozotænia Roborana	L. Roborana	80	7
Lozotænia Roborana, fem.	L. Cratægana	80	4
Lozotænia xylosteana	L. xylosteana	80	6
Lozotænia xylosteana, var.	L. obliquana	80	8
Lozotænia Rosana	L. lævigana	79	28
Lozotænia Rosana, var.	L. nebulana	80	1
Lozotænia semialbana	L. Modeeriana	80	11
Lozotænia costana	L. costana	80	9
Lozotænia Branderiana	Pœcilochroma maurana	90	13
Lozotænia subocellana	*Lozotænia subocellana*	80	2
Lozotænia biustulana	*L. biustulana*	80	10
Dichelia Grotiana	L. Grotiana	80	4
Dichelia Grotiana, var.	L. ochrcana	80	15
Amphisa Gerningiana	Phiedone Gerningiana	81	1
Amphisa prodromana	Amphisa Walkerana	81	2
Œnectra Pilleriana	Xanthosetia luteolana	101	16
Sarrothripa Revayana	Sarrothripus Ilicanus	91	14
Sarrothripa Revayana, var.	S. Stonanus	91	17
Sarrothripa Revayana, var.	S. ramulanus	91	16
Sarrothripa Revayana, var.	S. Lathamianus	91	13
Sarrothripa Revayana, var.	S. dilutanus	91	12
Sarrothripa Revayana, var.	S. undulanus	91	11
Sarrothripa Revayana, var.	S. degeneranus	91	7, 8, 9, 10
Sarrothripa Revayana, var.	S. Afzelianus	91	15
Oxigrapha literana	Leptogramma literana	96	10
Oxigrapha literana, var.	L. squamana	96	11
Oxigrapha literana, var.	L. irrorana	96	12
Oxigrapha literana, var.	L. tricolorana	96	13
Oxigrapha literana, var.	L. fulvo-mixtana	90	14
Oxigrapha Leacheana	*Peronea Leacheana*	95	15
Oxigrapha scabrana	Leptogr. scabrana	96	9

		PLATE	FIG.
Oxigrapha Boscana	Acleris Cerusana	96	8
Peronea cristana	Peronea cristana	93	2
Peronea cristana, var.	P. albo-flammana	94	3
Peronea cristana, var.	P. albipunctana	93	3
Peronea cristana, var.	P. ruficostana	94	2
Peronea cristana, var.	P. subvittana	93	5
Peronea cristana, var.	P. capucina	95	16
Peronea cristana, var.	P. insulana	93	6
Peronea cristana, var.	P. profanana	92	1
Peronea cristana, var.	P. Desfontiana	92	9
Peronea cristana, var.	P. consimilana	92	10
Peronea cristana, var.	P. albovittana	92	12
Peronea cristana, var.	P. fulvocristana	92	11
Peronea cristana, var.	P. spadiceana	92	7
Peronea cristana, var.	P. substriana	92	4
Peronea cristana, var.	P. brunneana	92	8
Peronea cristana, var.	P. vittana	92	6
Peronea cristana, var.	P. Chantana	93	4
Peronea cristana, var.	P. cristalana	92	14
Peronea cristana, var.	P. fulvovittana	92	13
Peronea cristana, var.	P. subcristalana	93	1
Peronea cristana, var.	P. striana	92	3
Peronea cristana, var.	P. semiustana	92	2
Peronea cristana, var.	P. Bentleyana	92	5
Peronea Hastiana	P. obsoletana	95	14
Peronea Hastiana, var.	P. radiana	93	8, 9
Peronea Hastiana, var.	P. divisana	93	7
Peronea Hastiana, var.	P. ramostriana	93	11
Peronea Hastiana, var.	P. centro-vittana	93	10
Peronea Hastiana, var.	P. albistriana	93	13
Peronea Hastiana, var.	P. combustana	93	12
Peronea Hastiana, var.	P. subcristana	94	8
Peronea Hastiana, var.	P. autumnana	94	1
Peronea Hastiana, var.	P. leucopheana	94	7
Peronea Hastiana, var.	P. coronana	94	4
Peronea Hastiana, var.	P. Byringerana	94	5
Peronea umbrana	P. umbrana	94	6
Peronea maccana	P. marmorana	94	9
Peronea rufana	P. albicostana	95	1
Peronea rufana, var.	P. bistriana	95	2
Peronea rufana, var.	P. similana	95	3
Peronea favillaceana	P. favillaceana	94	11
Peronea favillaceana, var.	P. reticulana	94	12
Peronea favillaceana, var.	P. tristana	94	13
Peronea? Schalleriana	P. Schalleriana	95	7
Peronea? Schalleriana, var.	P. rufana	95	8
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Peronea? comparana	Acleris costimaculana	96	1
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Peronea? variegana, var.	P. asperana	95	9, 10
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Peronea? tristana	P. trigonana	95	5
Peronea? tristana, var.	P. Logiana	95	6
Peronea? tristana, var.	P. plumbosana	95	4
Paramesia ferrugana	Paramesia gnomana	96	4, 5
Paramesia ferrugana, var.	P. tripunctulana	96	6
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		PLATE	FIG.
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Teras caudana, var.	T. effractana	97	3
Teras caudana, var.	T. emargana	97	1
Teras caudana, var.	T. ochracea	97	6
Teras caudana, var.	T. excavana	97	2
Dictyopteryx contaminana	D. contaminana	97	7
Dictyopt. contaminana, var.	D. ciliana	97	8
Dictyopt. contaminana, var.	D. rhombana	97	9
Dictyopteryx uliginosana	D. uliginosana	97	12
Dictyopteryx Læflingiana	D. Læflingiana	97	11
Dictyopt. Læflingiana, var.	D. plumbana	97	10
Dictyopteryx Forskaliana	D. Forskaliana	97	12, 13
Croesia Holmiana	Lozotænia Holmiana	80	17, 18, 19
Croesia Schreberiana	*L. Schreberiana*	80	20
Croesia Bergmanniana	Argyrotoza Bergmanniana	98	3
Argyrotoza Conwayana	A. Conwayana	98	5
Argyrotoza Conwayana, var.	A. Hoffmanseggiana	98	4
Argyrotoza Conwayana, var.	Argyr. subaurantiana	98	6
Ptycholoma Lecheana	Ptycholoma Lecheana	90	14
Ptycholoma Lecheana, var.	P. obsoletana	90	15
Eulia ministrana	Lophoderus ministranus	91	5
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Brachytænia semifasciana	Ditula semifasciana	81	11
Brachytænia Hartmanniana	D. scriptana	81	10
Antithesia corticana	Antithesia corticana	81	12
Antithesia Betulætana	A. Betulætana	81	13
Antithesia Cynosbatella	A. tripunctana	81	14
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Antithesia Pruniana	Antithesia Pruniana	81	15, 16
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Lithographia Nisella, var.	S. rhombifasciana	84	8
Lithographia Nisella, var.	S. Boeberana	84	5
Lithographia Nisella, var.	S. cuspidana	84	7
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Lithographia cinerana	S. cinerana	84	9
Lithographia nigromaculana	Anticl. nigromaculana	85	18
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		PLATE	FIG.
Lithographia obtusana	Anchylopera obtusana	85	1
Lithographia obtusana, fem.	A. consobrinana	(vol.ii.p.130)	
Lithographia nævana	Steganoptycha uni-punctana	84	3
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Bactra lanceolana, var.	B. pauperana	87	8
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Pœcilochroma piceana.....	Pœcilochroma piceana	90	9
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Pœcilochroma piceana, var...	P. semifuscana.....	90	10
Halonota bimaculana.....	Spilonota Strœmiana.	82	10
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Halonota scutulana, var. ...	S. sticticana.....	82	13
Halonota Brunnichiana.....	S. rusticana.....	82	11
Halonota Brunnichiana, var.	S. quadrana.....	82	16
Halonota fœnella.....	S. fœnella	82	8
Halonota trigeminana.....	S. trigeminana.....	82	12
Halonota trigeminana, var...	S. argyrana	82	15
Halonota costipunctana.....	S. costipunctana	82	14
Halonota tetragonana.....	S. tetragonana.....	82	17
Halonota Populana.....	Pseudotomia Populana	83	17
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Semasia Janthinana	Pseudotomia Lediana	83	24
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